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THE HUMMINGBIRDS OF THE SANTA MARTA REGION OF COLOMBIA.

BY OUTRAM BANGS.

Plate II.

EVER since Messrs. Salvin and Godman published the results of their study of the collections of birds made by F. Simons in the Sierra Nevada de Santa Marta, the eyes of many American ornithologists and mammalogists have been turned in the direction of that "isolated mass of mountains, whose snowy peaks, visible from far out on the Caribbean Sea, form so striking a feature in the scenery of the northern coast of South America."[1]

In December, 1897, Mr. Wilmot W. Brown, Jr., an experienced and skilful field collector, started for an indefinitely long trip in this region in the interests of the Bangs Collection. In the summer of 1898 his trip was broken up by his having to return to Boston on account of sickness in his family, but he is now back again at work in the Santa Marta region.

Mr. Brown is peculiarly adapted by nature for out-door work in the tropics and throughout his trip in this unhealthy region never had a sick day.

[1] Salvin and Godman, Ibis, 1879, p. 196.

For the first three months he worked in the vicinity of Santa Marta, collecting in the hot country and on some of the smaller mountains up to an elevation of 6000 feet. In March he left Santa Marta and travelled along the coast in an Indian dugout to Rio Hacha, from where roads lead in several directions into the higher mountains. Here he hired a pack mule, and taking along as a companion a shipwrecked sailor, started on foot up one of the mountain trails. After an arduous journey of several days he arrived at the Indian village of Pueblo Viejo, at about 8000 feet altitude. This was his first collecting ground in the higher sierra. Later he visited Macotama, 8000 feet, San Miguel, 7500 feet, San Franscisco, 6000 feet, and Palomina, 5000 feet, making collections at all these places, but on this trip got no higher than 8000 feet.

Travelling in the Sierra Nevada is at best slow and laborious and in the rainy season is harder still. Mr. Brown, in order to go as light as possible, carried no tent with him, and cut down his outfit in other ways till much too small for his comfort. Night after night he slept out with no shelter, wet to the skin by the terrific thunder storms that rage in these mountains nearly continuously throughout the spring. His one pair of shoes was soon worn out by the rough travelling, and for the greater part of the trip he went barefoot, his feet and legs exposed to the attacks of wood ticks and numerous insects, with every now and then a narrow escape from a fer-de-lance or a bushmaster.

Many of the trails are fairly good, being used by the Indians, but occasionally Mr. Brown had to cut his way through the forest, and the mountain streams, swollen by the continuous rains to raging torrents, were often very hard to ford. Under these conditions Mr. Brown made a very creditable collection, sending in over a thousand bird skins and about three hundred and fifty mammals as the results of his six and a half months work.

The Sierra Nevada de Santa Marta, with its highest peaks rising to 17,500 feet above sea level, forms an immense isolated mountain mass cut off from the other mountain ranges of northern South America by deep tropical valleys. In the hot, dry lowlands about Santa Marta the forest is stunted and brushy, but as one ascends the mountains the growth becomes more

luxuriant and the forest heavier. In places there are open grassy savannas, but most of the peculiar birds of the region dwell in the elevated mountain forest, cut off from their nearest relations in the elevated regions about Bogota and in the mountains of Venezuela by the intervening hot countries.

Many of the birds living in the Santa Marta mountains appear to be peculiar to them; a few species, however, occur both here and in the mountains about Merida, Venezuela, though absent in the intervening lowlands. Two good examples of such are the Parrot, *Pionus sordidus* (Linn.) and the Green Toucan, *Aulacorhamphus calorhynchus* Gould. On the other hand, we find in these two mountain districts instances of closely related representative species, as with the Flycatching Warblers — the golden-crowned *Setophaga flavivertex* Salv. being known only from the Santa Marta mountains, and the white-fronted *Setophaga albifrons* Scl. & Salv. inhabiting, so far as known, only the Merida region.

Compared with the birds of the Bogota region the difference is even greater, as most of the strictly mountain birds of the two regions prove at least subspecifically distinct.

Apart from the local forms there are of course a great many wide-ranging tropical species found in the Sierra Nevada, and a few Mexican and Central American birds, such as *Muscivora mexicana* Scl., push their ranges south to these mountains.

Before Simons made his famous collection several new species had been described from the Sierra Nevada de Santa Marta, or the hot countries about Santa Marta, generally from single specimens sent to England by orchid hunters or travellers. The more striking amongst these are the lovely little Hummingbird, the type of its genus, *Anthocephala floriceps* (Gould), the Motmot, *Momotus subrufescens* Scl., and the Oven-bird, *Furnarius agnatus* Scl. & Salv. Simons's collection added about nine more (not all described in the original reports on this collection). Since then one very distinct Flycatching Warbler, *Setophaga flavivertex* Salv., has been described, from two specimens contained in a small collection of birds made in these mountains. Mr. Brown's work, up to date, has yielded twenty-three additional new forms, most of them probably peculiar to the Santa Marta region.

These have been described by me in three papers in the Proceedings of the Biological Society of Washington, Vol. XII. (See Auk, XV, p. 339, and XVI, p. 90.)

Most interesting among the local birds of the Sierra Nevada de Santa Marta are the Hummingbirds. No less than six species peculiar to these mountains are now known. Most of these appear to be rare and local, and to breed high up in the mountains, migrating in winter down to lower altitudes. Mr. Brown took, in all, examples of seventeen species of Hummingbirds, and although he discovered one remarkable new species, secured examples of but two of the five local species previously known.

The species supposed to be peculiar to the Santa Marta Mountains are as follows:

Panychlora russata Salv. & Godm. Originally described from ten specimens collected by Simons in the Sierra Nevada de Santa Marta. Mr. Brown took six adults, at San Miguel and Palomina in May and June, and two females at Santa Marta in February, 1898. These last two I was unable to identify at the time and never recorded until now.

Anthocephala floriceps (Gould). Described from a specimen taken at San Antonio by an orchid collector. Simons took one at San José, and Brown one at Pueblo Viejo. These three specimens are I believe all that are known.

Another species of this genus, *A. berlepschi* Salv., is found in the Bogota region, differing from *A. floriceps* by having white instead of brown tips to the rectrices.

Oxypogon cyanolæmus Salv. & Godm. Described from five skins taken by Simons at 11,000 feet altitude in the Sierra. Not taken by Brown.

Rhamphomicron dorsale Salv. & Godm. Described from two specimens of Simons's collecting. Not taken by Brown.

Campylopterus phainopeplus Salv. and Godm. Described from Simons's ten specimens. Mr. Brown did not get this Hummer.

Leucuria phalerata Bangs. Described from one specimen taken by W. W. Brown, Jr., June 17, 1898, at Macotama. The type and only specimen is here figured (Plate II).

Of the capture of this beautiful Hummer Mr. Brown wrote me: "After a difficult march through the forest, the way barred by

swollen torrents and fallen trees, I arrived at the Argoneous town of San Miguel. Here Hummingbirds of many species were seen, and on that day [June 17] I collected the only specimen of this beautiful white-tailed species that I have seen in these mountains. I first detected it hovering above an orchid. Its flight was rapid and strong, and it uttered a twittering note as it darted from flower to flower in search of its food, its gorgeous plumage shining in the morning sun. As I only watched this little gem a few minutes before shooting it, I detected nothing in its habits to distinguish it from the numerous other Hummingbirds that were about me."

Another Hummingbird that may prove to be peculiar to the region is the *Metallura* that occurs in the Santa Marta Mountains. I recorded the pair collected by Mr. Brown, the male at Palomina and the female at San Miguel, as *M. smaragdinicollis*. To this species, also, Messrs. Salvin and Godman referred the one skin in Simons's collection, though with some misgiving. It would be very strange indeed if the Santa Marta bird is really *M. smaragdinicollis*, but my two specimens are so like skins from Bolivia and Peru that without much more material I cannot feel justified in separating it. There are slight differences, however, that may prove to be constant. The tail of the male is rather more of an auricula purple than in *M. smaragdinicollis*, and the rectrices seem to be wider; the luminous throat patch is also a darker green. The female is a paler buff below, much less spotted with green. These slight differences may or may not prove constant. On the other hand, *M. smaragdinicollis* is only found in the mountains of Bolivia and of Peru south of the equator; while in the mountains of northern Peru, Ecuador, Colombia, and Venezuela another species, *M. tyrianthina*, very different from it, occurs. Therefore, if *M. smaragdinicollis* really occurs in the Santa Marta mountains, it is wholly cut off from the main stock of its species by a wide area tenanted by a very different form. That such should be the case certainly seems improbable.

THE NOCTURNAL FLIGHT OF MIGRATING BIRDS.

BY O. G. LIBBY.

IT HAS long been a well-known fact of bird life that, during the migrating season, most, if not all, of the movement north or south takes place in the night. This ensures protection from enemies and opportunity for securing food during periods of rest. Under the cover of darkness, the bird passes safely and secretly through the air. During the day he can search for necessary food and by evening he is again ready to continue his flight.

But the very conditions that shield the migrating birds from danger, also preclude any very satisfactory study of their movements. We know, to be sure, that during the fall migrations, most of the large flocks will be found in the early morning on the north side of groves or belts of timber, and in the spring they are to be found on the south side. We know, too, from observations covering a long period of time that birds are seen in the morning which were not in the neighborhood the day before. And most bird lovers know how distinctly the calls of the migrating birds can be heard during the nights of middle September. Still it must be confessed that in proportion to the magnitude of this movement in the bird world and the importance of the interests at stake, economical as well as biological, our actual knowledge of the migration is exceedingly meager.

The writer has recently made two sets of observations upon the nocturnal flight of birds, an account of which may prove interesting to the general reader. The place of observation first selected was a small elevation west of the city of Madison, Wisconsin, with three lakes in the immediate vicinity. The evening chosen (September 14, 1896) was chilly and a raw southeast wind was blowing, though there were no clouds during most of the time. A total of three thousand eight hundred bird calls were recorded, an average of twelve per minute. This rate, however, varied greatly, sometimes running as high as two or three per second and again falling to about the same number per minute. The largest number of calls counted for any hour was nine

hundred and thirty-six, between two and three o'clock, though nearly that number were noted for two other hours. Nor were the calls at all confined to the few hours during which they were recorded. They began much earlier in the evening and when the observations ceased, at a little after three, they were heard steadily on long after that hour, with the regularity of the ticking of a clock. Manifestly it is quite impossible to estimate the number of birds represented by these calls. The equation contains so many unknown quantities that no satisfactory mathematical solution is to be expected with our present knowledge of the subject. But it may be very safely assumed that the number of calls must be multiplied many times to express even approximately the size of the flocks that were heard to pass during the course of the observation.

Nothing but an actual experience of a similar kind can at all adequately convey the impression produced by such observations. The air seemed at times fairly alive with invisible birds as the calls rang out, now sharply and near at hand, and now faintly and far away. Repeatedly it seemed as if some of the nearer ones must be visible, so vividly was their presence felt as they passed overhead. All varieties of bird calls came sounding out of the darkness that evening. The harsh squawk of a water bird would be followed by the musical *chink* of the Bobolink. Almost human many of them seemed, too, and it was not difficult to imagine that they expressed a whole range of emotions from anxiety and fear up to good-fellowship and joy. The fine shrill notes of the smaller Sparrows or Warblers were heard only close at hand but the louder ones came from all along the line, east and west. More than once an entire flock, distinct by the unity of their calls, came into range and passed out of hearing, keeping up their regular formation with the precision of a swiftly moving but orderly body of horsemen. The great space of air above swarmed with life. Singly or in groups, large and small, or more seldom in a great throng the hurrying myriads pressed southward. It was a marvel and a mystery enacted under the cover of night, and of which only fugitive tidings reached the listeners below.

The next station chosen was the Washburn Observatory, over-

looking the largest of the lakes in the vicinity of the city. The writer was assisted by Winslow Mallery, to whose patience and accuracy is due not a little of the success attending these initial observations. It was proposed to watch the moon through a small six-inch telescope, and to count the birds as they passed across its surface in the southward flight. For convenience in keeping the record, the whole time of observation was divided into periods of fifteen minutes each and the count for each period kept distinct from the rest. The result exceeded all expectations and well repaid the inconvenience attending such experimental work. During the three nights of observation, Sept. 11, 12 and 13, 1897, a total of five hundred and eighty-three birds were counted, and forty-five during one fifteen-minute period. On the evening of the 12th, three hundred and fifty-eight were counted, the largest number for any one period being thirty-five. The number of birds seen during different hours of the night was very unequal. The maximum number of three per minute was reached at 10.30, and it diminished rapidly to a little more than one third of this number at midnight. From this time the number declined, with three considerable upward variations, to very near the zero point. As to the direction of flight very great diversity was also observed. The predominant direction up to ten o'clock was very nearly south, and but comparatively few birds varied from this. The diversity of direction, however, continued to increase till it reached its maximum between twelve and two o'clock. At this time the eight principal points of the compass were represented by numbers varying from three to twenty-eight; two-thirds of the whole number still maintaining a southerly direction.

The observations as to the number of birds and the direction of their flight tell substantially the same story. The first considerable falling off in the number of birds came at 11.15, and up to 10.45 they were observed to fly largely in one direction, not half that number for any period taking any other direction. Thus the intensity of the migratory movement, measured by the number of birds and the regular direction of their flight, is seen to be at its height early in the evening. The diminishing numbers and increasing variety in direction indicate plainly enough that during the time of observation other things besides migration

were taking place later in the night. This latter conclusion is borne out by the larger number of calls heard toward morning, which may be explained as arising from the effort to reassemble the scattered members of the migrating companies. As a general conclusion to be drawn from the whole observation, it would seem that the great mass of migrants thrusts itself rapidly forward for the first two or three hours in one main direction and that separate flocks maintained this movement many hours later. And that after the first advance was completed, the remainder of the night was spent in more miscellaneous movements, having for their purpose, partly at least, the collecting of the widely separated fragments of the different groups, and the selecting of suitable feeding grounds.

This fugitive glimpse into a new phase of bird life reveals many things besides the two chief points already noted. When one recalls the relatively small size of the moon's surface compared to the length of its path from east to west, within the range of vision, some idea of the whole number of birds passing this line may be obtained. Prof. A. S. Flint of the Washburn Observatory estimated that about nine thousand per hour passed during the entire period of observation, or a total of one hundred and sixty-eight thousand. And when the length of this line is compared to the breadth of the whole country over which birds move, the total number of migrating birds for a given area may be roughly estimated. This states in numerical fashion the meaning of the semi-annual migration of our birds. It falls as far short of expressing what the movement really is as does a census report of revealing the daily life of a city like New York or Chicago.

The movement of the birds across the field of vision irresistibly suggested the rapid, undulatory motion of animalculæ under high magnifying power. The time of passage varied from one-tenth to one-half a second. In most cases the movement of the wings was plainly visible, though occasionally a bird passed across like a flash. One bird hung for several seconds on the edge of the field of vision, poising itself by rapid motions of the wings. Several times a bird was seen to change its direction of flight completely, usually going off at right angles. Very rarely

were the birds numerous enough to be seen two at a time, though this happened once during each evening. Not infrequently currents of air seemed to aid or retard their flight. One bird was seen to move backwards across the field as a slowly flying bird is sometimes seen to do from the window of a swiftly moving train. Many of them sailed instead of flying across, occasionally flapping their wings to steady themselves.

On account of the short time each bird was in sight, and the difficulty of estimating their relative distances, not many of them could be identified. More Swamp Blackbirds were identified than any other, and next to them were the Meadowlarks, of which several flocks were observed. Besides these there were the Crow Blackbird, Sparrow Hawk, Yellow Hammer, and one species of Duck. Many of the birds, from their size and flight, must have been Warblers, but it was impossible to further identify them. A number of birds resembling Gulls were observed in large flocks, but nothing could be determined as to the species. The single Sparrow Hawk seen was moving leisurely along in no particular direction except that he seemed to be following the main stream of birds. His hesitating appearance showed how well concealed were his intended victims, though he had sufficient intimation of their presence to keep him on the track. A more thorough acquaintance with the appearance of the birds in flight would have added greatly to the value of the observations.

How the birds are guided in their nocturnal flight is perhaps the most puzzling question which rises in the mind of the observer. There are two possible solutions of this problem. They may be guided by the stars, or by the contour of the country, the lakes and river valleys. Certain it is that cloudy, and especially foggy nights are not favorable for flight. Birds lose their way and wander from their course as seamen do when there is neither sun nor star to guide them. It may be accepted as settled that birds are not possessed of an infallible instinct that guides them, otherwise they need not be disturbed by a fog. The results of the observations just cited show the same thing. That birds do wander from their course is seen from the great variety of directions taken by them during the night. Certainly not all in a given flock fly in one unvarying direction. Individ-

uals get separated or lost and fly in the widely divergent tracks already referred to. The sudden changes in direction that were observed in certain cases may tell the same story. These birds had perhaps lost their way, and hearing the calls of their comrades, wheeled about to join them. The not uncommon sight of birds of one species in a flock of a wholly different kind also shows how frequently they get lost during their migrations.

The turning of the telescope upon this comparatively unknown field suggests endless possibilities. It affords us a means of surveying a plexus of bird life marvelously intricate and full of discoveries. There is revealed to us a new side of the wonderfully human life of the bird. We can sit quietly by while the march of feathered legions goes on, — unsuspected spectators of one of the great events in the world of flying things. The dangers and difficulties attending such an exodus are very real. Along the flanks of every company or hovering in the rear are the birds of prey watching to pick off every careless straggler. The earliest comers are exposed to all the risks of sudden changes in the weather, and great storms like that of 1895, which destroyed so many Bluebirds. The strain of such a journey is not inconsiderable, and it effectually weeds out all but the most hardy individuals; the young, the sick and the old being the first to fall by the way. Twice each year the migratory birds attempt the marvelous feat and perform it with such silence and celerity that it goes on almost unnoticed. But if each bird in his nocturnal passage were as luminous as a meteor, how the heavens would blaze during the migrating season, and how wonderful would seem their journeyings to and fro. Not the less wonderful do they seem to the true bird-lover, though he can catch only stray glimpses of those numberless hosts that move along their airy highways with each recurring season.

The fewness of such detailed observations as are here briefly sketched leads to the conclusion that their value is not appreciated as it should be. Those who study birds for the pure love of it may find here a delightful glimpse into a fresh field. A telescope is not a necessity, good field glasses will show all but the smallest birds. The larger the number of observers the more accurate will be the general conclusions arrived at in the end.

Each may do something of value while studying in a new way the familiar problems of bird life. The writer hopes simply to encourage others to work along a line which has been of so much interest to him and which seems so full of new material.

A HISTORICAL NOTICE OF ROSS'S ROSY GULL (*RHODOSTETHIA ROSEA*).[1]

BY JOHN MURDOCH.

As I am one of the very few naturalists who ever had the good fortune to collect more than a few straggling individuals of this beautiful and still rare Gull, or, indeed, to see the bird in anything like large numbers, I have always felt a great interest in the species. The bird, indeed, should be of interest to all naturalists, for although it has been known to science for seventy-five years, and although I have seen literally thousands of them on the wing, there are still not more than 110 specimens known to be in existence in collections, and most of these have been procured since 1880. The great difference between the actual numbers of the bird and its representation in collections is plainly due to some remarkable peculiarity in its habits and geographical distribution. I hope to show what this peculiarity is in the present paper, in which I have tried to present all that we know of the history of the species.

The bird, of course, is well known to ornithologists, but as all my hearers are not ornithologists, it will be well to describe it briefly before going on to give an account of its discovery. It is a graceful little Gull about the size of a Pigeon, and not unlike the little Bonaparte's Gull which is so common along our coast. It is, however, strikingly different from all other Gulls in two important particulars. In the first place, it is the only Gull

[1] Read before Section F, American Association for the Advancement of Science, August 28, 1898.

known with a wedge-shaped or cuneate tail. With the exception of the genus *Xema*, which has a forked tail, all other Gulls have the tail feathers of equal length, but Ross's Gull has the middle pair of feathers longer than the rest, with the lateral feathers graduated in length towards the middle. Hence it has sometimes been called the Cuneate-tailed Gull. This one character serves to distinguish the species infallibly. The other striking characteristic, though a less constant one, is the color of the underparts. Many of the smaller Gulls and at least one species of Tern have the white of the breast and belly tinged during the breeding season with a delicate rosy pink or peach blossom color, which is very evanescent and soon disappears when the bird is skinned. In the fully developed Rosy Gull, the rose color spreads over all the underparts and is so deep as to be almost a salmon color. This color fades after death, when exposed to the light, but a particularly brilliant specimen in our collection which had been kept carefully in the dark, showed no perceptible change in a year. On the other hand, Gätke reports that some pink feathers of his Heligoland specimen, which he kept shut up in an envelope, faded as badly as the mounted bird.[1] For the rest, the 'mantle,' as the back and wings are called in a Gull, are of the well known 'gull blue,' and the head and tail are white. The adult in summer has a narrow black collar round the neck, which is wanting in the winter plumage. The young birds in the autumn have the back and the wing-coverts more or less mottled with dark feathers, black feathers in the wing, and a black bar across the tip of the tail. Several stages of immature plumage have been described, and it is quite probable that, as is the case with many other Gulls, the bird needs several years to reach the full adult plumage. It is, however, impossible to establish this at present, as the birds have been observed in large numbers only in the autumn. The amount of rose color varies a great deal. Two thirds of the young birds that I have examined were quite white, and more were very rosy, while one of the adults had all the white parts except the tail deeply suffused. I have never had the good fortune to see an adult in summer — indeed, very

[1] Heligoland as an Ornithological Observatory, p. 558. Edinburgh, 1895.

few have been taken — but from the published descriptions, the rose color must be as deep as in our brightest specimen.

The bird was first taken by the famous Arctic explorer Sir James Clark Ross, who at the time was one of the junior officers in Captain Parry's second expedition in search of the Northwest Passage. The first mention of the bird is in Parry's narrative of the voyage, as follows: "Mr. Ross had procured a specimen of a Gull having a black ring round its neck, and which, in its present plumage, we could not find described. This bird was alone when it was killed, but flying at no great distance from a flock of Tern, which latter it somewhat resembles in size as well as in its red legs; but is on closer inspection easily distinguished by its beak and tail, as well as by a beautiful tint of a most delicate rose-color on its breast" (p. 449). It was shot at Alagnak, Melville Peninsula, on June 23, 1823. At last accounts, this specimen was in the Derby Museum at Liverpool. Four days later, on June 27, one of the other officers shot another specimen at the same place. This was given to the University Museum at Edinburgh.

Dr. (afterwards Sir John) Richardson, well known as the companion of Sir John Franklin in his earlier explorations, was commissioned to describe the zoölogical collections made by Captain Parry, and accordingly among other things, published a description of this new Gull in the 'Appendix' to Captain Parry's journal of a second voyage (1825), giving it the name of *Larus rossii*. This description was based upon the specimen killed by Ross, which would therefore be the type, were it not that by an unfortunate chance, the species had already received the specific name by which we are obliged to recognize it.

The circumstances were as follows: While Dr. Richardson was still at work on Captain Parry's collection, the well known ornithologist Macgillivray, who was at the Edinburgh Museum, had occasion to prepare a revision of the genus *Larus*, which he published in the Memoirs of the Wernerian Society (Vol. V, 1824) under the title 'Description, Characters, and Synonyms of the Different Species of the Genus *Larus*, with critical and explanatory Remarks.' In this paper (p. 249) occurs the following passage: "With regard to the tail there are two remarkable . . .

exceptions; the one . . . in the *Larus sabini* . . . ; the other *L. roseus* *, in which it is subcuneate, the middle feathers being considerably longer, the rest graduated." Referring to the name *L. roseus*, a footnote reads, "The name given *pro tempore* to a new species of Gull, discovered by the last Arctic Expedition, but which is to receive its proper designation from Dr. Richardson." It is perfectly evident that Macgillivray had not the least intention of giving a permanent name to the species, and that he merely wished to have a convenient designation for the bird under discussion. Nevertheless, under the strict rule of zoölogical nomenclature, he had 'published' the species, for he had published a binomial name with an accompanying diagnosis, and nothing that he or any one else might do could ever change it.

It is said that this premature naming of the species caused considerable bad blood at the time, and indeed Richardson refers to an alleged previous description which he was unable to find, in a somewhat offended tone, but he certainly had no good ground for offense, as Macgillivray's intentions were plainly all right. It was merely a case of playing with edged tools. When Macgillivray himself separated the species generically from *Larus* under its present name of *Rhodostethia*, he adopted the specific name of *rossii* (Manual of British Ornithology, Pt. II, p. 252, 1842), which of course was illegitimate.

The name as now adopted, *Rhodostethia rosea*, was first used (without explanation) by Bruch in the 'Journal für Ornithologie,' 1853 (p. 106). Bonaparte had used the name *Rossia* for the genus in 1838 (Comparative List of Birds of Europe and America, p. 62), but the name was accompanied by no description, and had moreover been used by Owen in 1835 for a genus of Mollusca.

So much for the nomenclature of the species.

Meanwhile, there were no more records of the capture of the bird, although it was the time of the great Arctic expeditions, culminating in the great Franklin Search, when hundreds of men were pressing into the Arctic regions. It was seen during Parry's expedition over the ice northward from Spitsbergen in lat. 82° north (J. C. Ross, Appendix to Parry's 4th Voyage, p. 195,

1828), and "Mr. Abernethy saw one fly over the ships in Felix Harbour," Boothia Felix, during Ross's second voyage (J. C. Ross 'Appendix' to the narrative of the second voyage.... By Sir John Ross, p. xxxvi, London, 1835). Reinhardt admitted the species to his list of 'Birds observed in Greenland,' because he had been "told by a trustworthy person that Holböll formerly possessed an example, probably obtained in Greenland during the latter years of his life" (Ibis, 1861, p. 18). In fact, up to 1875, when Mr. Saunders made his census of the specimens known to exist in museums, the only ones whose capture had been previously recorded were the two original specimens, one taken at Heligoland by Gätke on February 5, 1858 (See Heligoland as an Ornithological Observatory, p. 558) and one shot by Müller on Suderöe, one of the Faeroe Islands, on February 1, 1863 (Naturhistorisk Tidsskrift, ser. 3, vol. III, p. 8). Nevertheless, Saunders was able to record seven other specimens in collections, four from Disco, Greenland, two said to have come from Kamchatka, and one, an adult in winter plumage, said to have been killed in Yorkshire. The Tegethoff Expedition obtained a single specimen in 1873, while the ship was beset off Franz Josef Land (Payer, New Lands within the Arctic Circle, p. 191, N. Y., 1877), and the Museum at Copenhagen received another specimen, probably from Greenland. Two more solitary specimens were collected in 1879, one in immature plumage by the naturalists of the 'Vega' Expedition, at Pitlekaj, their winter quarters on the northeast coast of Siberia, on July 1, and the other, a very young one, on October 10, by Mr. Nelson, at St. Michael's, Alaska. The latter was the only specimen seen by Mr. Nelson during a residence of several years at St. Michael's, and it was a strange bird to the Eskimos.

Such was the state of our knowledge of the species, when the Point Barrow expedition, in which I was one of the naturalists, sailed from San Francisco in 1881. Fifteen specimens were known to have been taken since 1823 — we were then ignorant of what the naturalist of the 'Jeannette' had seen and collected — from widely scattered localities, all indicating a completely Arctic distribution. The bird was still one of the great prizes for an ornithologist, and there was no indication that we were more

likely to find it than, for instance, the English Arctic expedition of 1875. At all events, we were entirely unprepared for what really happened.

We reached our station late in the season, and at the beginning experienced much bad weather. For several weeks, all our energies were devoted to building our house and getting our supplies under cover, and it was the end of September before there came a little lull in the work so that I was able to get out for a day's shooting. It was on September 28 that I shot my first specimen. I well remember the day, beautifully clear and cold with a fresh northeast wind. The ground was frozen hard and a light fall of snow lay upon the earth. As I walked up the beach, several flocks of small graceful Gulls passed me, moving towards the northeast, but out of gunshot. As they whirled in the sunshine, I thought I noticed that some of them were rosy underneath. Could they be the famous Rosy Gulls? As may be fancied, I grew a little excited. The question was soon settled, for a flock at last came within range, and a fortunate shot brought down a bird which proved to be a fine adult in winter plumage. I came home well pleased with myself, as may be supposed, but unfortunately my skinning tools and arsenic were not yet accessible, so I laid the bird carefully away on a barrel in the cold store tent to be attended to at the first opportunity. But I had failed to reckon with the ubiquitous Eskimo dogs, and when I came to look for my precious bird, it had vanished!

For nearly a month, the Gulls continued to pass in large numbers, moving generally towards the northeast, but nearly all were out of reach over the water. Besides, we were so busy getting settled and beginning the meteorological and magnetic work for the year, that no time was allowed us for collecting. We ornithologists consoled ourselves with the belief that we should get plenty of them in the spring, but to our great surprise, we did not see a single one, either in spring or summer, and the same was true of the season of 1883. Plainly, therefore, they did not breed anywhere close to Point Barrow.

Early in September, however, they began to appear again, a few stragglers at first, out among the loose pack ice, and on Sep-

tember 21, they were again abundant. They appeared in large, loose flocks, coming in from the sea and from the southwest, and all apparently flying to the northeast against the cold, fresh breeze. Most of the flocks whirled in at the mouth of the lagoon close to the station, and circled round the house with a peculiarly graceful wavering flight, and many were shot almost from the doorstep. For a week, as long as the east wind blew, they continued plenty, all following the same track. Then none were seen until October 6, when there began another large flight, which lasted for several days. On October 9, in particular, there was a continuous stream of them all day long, moving up the shore at a short distance from the beach, and occasionally swinging in over the land. We saw none coming back.

We were better prepared for them than we had been the preceding autumn, but though all the guns turned out, the number secured was exceedingly small compared with the number seen. The shooting was by no means easy, since for one flock that passed within gunshot, twenty were out of range, and the flocks were so loosely scattered that it was almost impossible to secure more than one bird at a shot.

However, we secured enough of them to satisfy any but the most avaricious. When we came back to Washington, Dr. Coues half seriously took me to task "for vulgarizing this beautiful bird," and Professor Baird expressly forbade our making public the number collected, for fear he should be overwhelmed with requests for gifts or exchanges. To my great chagrin, I had only a small share in this great shooting, for at the time the Gulls were most abundant, I was laid up with a severe cold which prevented me from doing any outdoor work, or indeed from skinning the birds as they were brought in. This, however, did no serious harm, because the birds were put away, — out of reach of the dogs, this time — is our new block house, where they soon froze solid, and staid frozen until I was ready to attend to them. Every night, I used to pick out a batch of about half a dozen, all that I wanted for a morning's work, and put them on the rack behind the stove in the quarters, where we used to dry our stockings, and the next morning they would be nicely thawed out and ready to skin. Still, Arctic taxidermy has its

drawbacks. The carpenter's shop, where I had to work, would not warm up in spite of the little Sibley stove in it, and by the time I had a skin turned inside out and the skull cleaned, the skin would be so stiff from freezing that it would not turn back, and I used to have to warm it at the stove before I could finish the skin. Besides the metal top, which our commanding officer thought was such a neat and cleanly thing to put on my skinning table, used to become uncomfortably numbing to the fingers.

One would naturally suppose that some enterprising collector would have visited Point Barrow after we left, and that a constant supply of these birds would have reached museums, but as a matter of fact, I have seen no published record of any specimens from that region later than our own. I have been informed, however, that there are one or two skins in San Francisco, which I have reason to believe were smuggled in by an unscrupulous member of our party, who appropriated birds which he had shot, though of course, everything collected by any member of the expedition was Government property.

Nor have any large numbers of the species since been collected anywhere else, but specimens continue to come in as stragglers just as they did before our great 'strike.' Before our collections reached the museum, there had already been received the three battered skins that Mr. Newcomb, the naturalist of the 'Jeannette,' so pluckily brought out in that desperate retreat across the ice, after the wreck, when they abandoned everything that they could possibly dispense with. They had secured seven birds, but brought out only the three showing the most interesting stages of plumage. These birds were all taken while the ship was beset north of Wrangel Island, in October, 1879, and the latter part of June, 1880. During the march across the ice, they saw several, early in July, 1881, just north of Bennett Island (De Long, Voyage of the Jeannette, *passim*).

No more captures were reported until Dr. Alexander Bunge, a Russian naturalist, secured two in the Lena Delta, on July 8, 1883 (Mélanges biologiques, Vol. XII, pt. 1, p. 57). The Yakuts told him that it was very rare. The next bird was taken at Disco on June 15, 1885. It was said to have been shot at the nest, and an egg was sent with it by the collector. (Reported

by Seebohm, P. Z. S., 1886, p. 82.) There appears to have been more than a little doubt about this egg, though the announcement that was made so confidently has never been definitely contradicted. At all events, Mr. Saunders, in a recent volume of the British Museum Catalogue of Birds, still calls the incubation unknown. This specimen, I take it, is the one in the Seebohm collection in the British Museum.

In the meantime, though much Arctic work had been done, notably by Jackson and the various Peary expeditions, nothing more was heard of the species until the return of Nansen and the 'Fram,' when we received a really important contribution to our knowledge of the biography of the bird.

As Nansen and Johansen were approaching Hvidtenland in 1895 on their return from their northward dash, they first saw these birds on July 15, and as they drew in towards the land, the Gulls were seen in constantly increasing numbers, though never in anything like the flocks that we saw at Point Barrow. After passing Hvidtenland, which is in lat. 81° 38′ N. and long. 63° E., no more birds were seen, nor was the species found by the Jackson-Harmsworth expedition on Franz Josef Land.

Nansen very justly inferred that the birds which he saw had bred on Hvidtenland, and he is undoubtedly the first naturalist to discover a breeding ground of the species. During the previous August, eight young birds had been killed alongside the 'Fram,' then somewhere between the New Siberian Islands and Franz Josef Land.

The last specimen recorded was shot on Bering Island, one of the Russian Seal Islands in Bering Sea, on December 10, 1895. Governor Grebnitski gave the bird to Dr. Stejneger of the National Museum, when the latter visited the island in 1897. The specimen is now in the National Museum. (Stejneger, Auk, vol. XV, p. 183, 1898.)

It will be seen that we still have much to learn about the habits of the species. I think, however, that certain conclusions can be drawn from the observations that I have just reviewed. We may disregard the occurrence of the bird in the Faeroe Islands, England, Heligoland, St. Michael's and Bering Island. These records can teach us nothing, for the birds were mere stragglers,

driven out of their regular course by stress of weather, or something of the sort. Somewhat more significant is the record from Disco, where the bird appears to occur with a certain regularity.

The home of the bird is plainly in some high northern latitude, and is evidently not to be looked for north of Smith Sound, for that region has been thoroughly explored and yet the bird has never been seen north of Disco. The comparatively large numbers seen by Newcomb and Nansen, as well as the occurrence of the species in the Lena Delta, seem to show that it is really at home in the region between Hvidtenland and Wrangel Island, but the enormous numbers of these birds seen at Point Barrow prove, to my mind, that the main centre of the species is somewhere in that region.

Now, it is well known that there is very strong evidence in favor of the belief that there is a large island not far north of Point Barrow, and I believe that this Keenan Island, as it has been called by our American geographers, is the main breeding ground of the Rosy Gull. That eggs will be found on Hvidtenland, I have no doubt, and a breeding colony will doubtless be found on Bennett Island, but the naturalist who reaches Keenan Island in the proper season will be able to do as well for his museum with the eggs of this bird as we did with the skins.

Almost nothing can be stated positively about the habits of the species. Unquestionably, the flocks that travelled by us toward the northeast were not migrating, for their course led them into the very face of the approaching winter, and away from the open water where food could be procured. They must have been simply wandering aimlessly against the wind, and probably worked back again farther off shore when the wind changed. As far as I know, the bird has never been seen except on the wing, and I fancy that it is a good deal of a wanderer. In all probability, like the polar whale, it spends most of its lifetime about the loose edge of the pack ice well out at sea, coming down into the stormy ocean in winter, and in summer retiring to its inaccessible breeding grounds in the far North. However, this is, as yet, only a plausible hypothesis, and I believe that the life history of this beautiful bird will not be wholly understood until the region north of Point Barrow has been thoroughly explored.

NESTING OF THE HERMIT WARBLER IN THE SIERRA NEVADA MOUNTAINS, CALIFORNIA.

BY CHESTER BARLOW.

IT WAS in the summer of 1896 while quietly and leisurely working my way down a steep hill, through a tangle of manzanita and deer brush into a growth of pines, that I met my first Hermit Warbler in life. I had arrived in the Sierra Nevada Mountains of El Dorado Co., Cal., a few days previously, and when I first ventured to explore the woodland, the many similar dainty bird songs from the heavy foliaged black oaks, made positive acquaintance with the various Warblers, by song alone, a difficult matter. This was partially overcome later, but when the notes were mingled in the tree-tops early in the morning, with the little musicians deftly hidden amongst the leaves, it was never easy to always name the songster. Of the Warblers the genus *Dendroica* was represented by *nigrescens*, *auduboni*, *occidentalis* and *æstiva*, with the latter least common, while the Calaveras (*Helminthophila rubricapilla gutturalis*) and Macgillivray's Warblers (*Geothlypis macgillivrayi*) were quite common in the underbrush and the roselike shrub known as 'mountain misery,' both of the latter, however, often feeding in the trees, usually in the black oaks. I also shot one specimen of the Lutescent Warbler (*Helminthophila celata lutescens*) in this locality, which was the only one seen. My observations ranged from 3,000 to 4,500 feet altitude, but the nesting sites were all at 3,700 feet, which formed a part of the transition zone, in which species of both the valley and higher mountains were nesting.

So on July 19, 1896, while whiling away an afternoon on the wooded hillside, a Hermit Warbler (*Dendroica occidentalis*) flitted noiselessly down through the pines and alighted on a bush ten feet distant, its light yellow head and black throat setting off its plumage with rather an odd effect. This specimen I collected, it proving to be a male bird. Thereafter it was met with frequently, seeming to prefer the coniferous trees, where it flitted about feeding and indulging in an occasional burst of song.

In 1897, June 7 to 15 was spent in the same region, the Warblers seeming present in usual numbers, with the Black-throated Gray and Macgillivray's noticeably more common than the others. The Macgillivray's Warbler was commonly noted with families of young in the thick deer brush of the burnt districts, and on June 15 I found a nest of the Black-throated Gray Warbler, cosily hidden away in the center of a manzanita bush on a hillside, containing four eggs advanced in incubation. The nest was seven feet from the ground and the grayish materials of which it was composed harmonized perfectly with the light greenish-gray leaves of the manzanita bush.

A nest of the Hermit Warbler was discovered June 11, 1897, by Mr. F. M. Nutting, just after he had shot the female as she flew to the tree, and contained four young about four days old. The nest was in a small cedar tree, about two and one-half feet from the top of the tree and twelve feet from the ground. It was built on a small horizontal limb of the cedar next the trunk, and was perfectly concealed amid the foliage. The tree grew within a few feet of a wood road, and on the following day the male was observed feeding the young, apparently not seeming to notice the absence of its mate. On the 14th of June a heavy rain and thunder-storm prevailed, resulting in the death of the young birds. The location of this nest seems an exception, the typical nesting seeming to be in the tall conifers.

This year (1898) it was my ambition to seek out the nesting site of the Hermit Warbler, and daily when strolling down the cañon-side or along the paths in the woods, I would see little *D. occidentalis* flitting about a fir tree here or a deer bush a little farther on, nowhere evincing a particular interest and finally fading from view. Once again while sitting in a pine grove quietly waiting to see which of our feathered friends would first discover me, a Hermit Warbler alighted on a low limb of a pine, perhaps fifteen feet away, and deliberately hopped from limb to limb, working toward the top where it was lost to view. To satisfy my curiosity I climbed the tree, which was about 35 feet in height, but there was no evidence of a nest. The Hermit Warbler did not appear to be as active as some of the others, notably the Black-throated Gray, which was very lively both in action and

song while on the border of the clearings, while the Hermit was more deliberate in its movements.

On June 14, I was located at Fyffe, El Dorado Co., and shortly after lunch sauntered along a trail leading off the old stage road and was soon in a growth of yellow pine, which was here and there interspersed with a small clearing where a giant spruce or fir had once towered, but which had long since found its way to the saw-mill. The day was cloudy and the birds were in fuller song than usual at this time of the day. Several Warblers were at first watched to no effect. I was carefully scanning the trees, and presently saw a small dark spot among the needles near the top of a slender pine which stood in a small open space close to a large black oak. No birds came to view, so I climbed the tree, and when well toward the top the uncertain spot became with certainty a small nest, and a moment later I could discern a reddish lining of cedar bark and four eggs which I concluded were those of the Hermit Warbler. Waiting a few moments and not disturbing the nest, soon one and then both birds appeared, settling all doubt as to the identity of the nest. Both hopped slowly about in the top of a black oak exhibiting very little concern and occasionally uttering a weak *tseet*; but no song was given at this time. Leaving the nest I watched the bird from the ground. She flew to the pine and hopped now up and then down, picking at the limb at each hop and finally disappearing into the nest. Returning shortly after with camera I again climbed the tree, the female leaving the nest when I was several feet from it. With difficulty, sitting astride a small limb, I made several pictures of the nest *in situ*.

The nest was 45 feet from the ground in a yellow pine, built four feet from the trunk of the tree on an up-curved limb 18 inches from the end. The nest rested nearly on the pine needles at the junction of two small limbs. Carefully wrapping the eggs I sawed off the limb supporting the nest; this seemed to excite the birds more than anything else, both hopping about and uttering their *tseet*, *tseet* at a lively rate. When I finally descended, the birds hopped about the tree and to the spot where the nest had been; then one would fly to a large spruce near by and launch into a weak song. I collected the female parent.

The nest is not fastened to the limb, resting merely upon the limb and pine needles and is wider at the bottom than at the top, its base measuring four inches one way and three inches the other. It is very prettily constructed, the bottom layer being of light grayish weed stems, bleached pine needles and other light materials held securely together by cobwebs and woolly substances. The nest cavity is lined with strips of red cedar bark (*Libocedrus*) and the ends, instead of being woven smoothly, project out of the nest. The inner lining is of a fine brownish fiber resembling shreds of the soap-root. The composition of the nest gives it a very pretty effect. The eggs were about two-fifths advanced in incubation and measured .66 × .52, .68 × .53, .67 × .53 and .67 × .53 inches. They are spotted chiefly in wreaths at the large end with varying shades of lilac, brown and chestnut. This forms the second recorded set of eggs of this Warbler, the first having been taken by Mr. R. H. Beck in 1896 near this locality.

During my stay in the mountains I became well acquainted with the song of the Hermit Warbler. Though not loud it would penetrate through the woods quite a distance and very much resembled *tsit, tsit, tsit, tsit, chee chee chee*, the first four syllables being uttered with a gradual and uniform speed, ending quickly with the *chee chee chee*. It was quite distinct from any of the other Warbler songs, and whenever it was heard the little musician was usually traced to some pine tree where he would be found hopping nervously about.

My ten days' vacation was productive of many interesting sights. Western Robins were nesting rather commonly, seeming to prefer the pines and cedars, in which the nest was usually placed near the top in a crotch at the trunk of the tree. Cassin's Vireos, usually common nesting residents, were going about in pairs in full song, and it seems likely that but few nested this season, owing to peculiar climatic conditions.

A pair of White-headed Woodpeckers had a nest seven feet up in a large pine stub near the house, in which a pair of Western Bluebirds were also nesting. Both the nests contained young and it was interesting to observe them. As I watched, the female Woodpecker, with a grub in her beak, came and alighted variously on the fence and cedar trees near by until she sum-

moned courage enough to fly to the stub, when both Bluebirds fiercely attacked her, she retreating to a pine on the edge of the woods. Soon she ventured to try again and alighted on the back of the large stub, when instantly the young Woodpeckers set up their squeaky little notes, evidently having heard her through the medium of the wood. She hopped around and up to the hole and one little white head bobbed up. She thrust her head into the cavity, deposited the morsel and was away to the forest once more. During the next few days it was a common sight to see a little white head peering out of the hole, its little owner evidently anxious to see the outside world.

My friend, Mr. L. E. Taylor, a very careful observer, sent me a beautiful nest and five eggs of the Western Winter Wren, which he collected on July 12 near Fyffe, El Dorado Co. He writes that an old nest was shown him by a German prospector and while examining it the new nest was discovered. Mr. Taylor writes as follows: "He said that in his country (Germany) the bird was called the 'Snow King,' as it came only in winter and lived in the snow. From his description I thought it must be the Western Winter Wren, so I got him to show me the nest with a view to photographing it for you and collecting the nest. He said he was prospecting and was 'panning out' and heard a sort of drumming noise and looked up to see what caused it and saw it was made by the 'Snow King,' which was feeding its young not more than two feet from his head. He watched the bird some time and continued to work near by and to 'pan out' in the same place. The bird soon became quite fearless and seemed to be not at all afraid of him.

"The nest is built in the side of a perpendicular bank about four feet high and the nest is half way up and is set into the bank so the outer edge of the nest is even with the face of the bank and just showed the rim and a little moss on careful inspection. The entrance looks like a small hole in the bank. I could just reach the bottom of the nest with my fingers and found some egg shells, showing young had been raised. While talking the matter over I saw a Wren fly down into a prospect hole a short distance away, and it not coming out again, I went to the hole and, stepping into it, flushed the bird from the nest.

It proved to be situated just like the other one and contained five beautiful eggs. I got the nest out with some difficulty, as it was held to the bank by many small roots. The cavity in which the nest was made is lined overhead with moss, making a roof for the nest."

Upon receiving the nest and eggs from Mr. Taylor I found the eggs addled and the bird had doubtless been sitting upon them for some time in vain; otherwise this nesting date would be unusually late and the site of the nest an unusual one. The prospect hole in which the nest was found was on a hillside fully exposed to the sun and very dry, which seems quite in contrast to the usual habitat of this Wren.

SOME OBSERVATIONS ON THE ANATIDÆ OF NORTH DAKOTA.

BY REV. HERBERT K. JOB.

IT was my privilege in the spring of 1898 to enjoy a collecting trip in North Dakota that covered nearly the whole nesting period, — from May 6 to July 4. With a companion, 'rig,' and camp outfit I made a 600 mile tour, visiting most of the principal lakes in the northern half of the State, as far west as into the Turtle Mountains. Paying especial attention to the Ducks, I had an unusual opportunity to note the distribution of the different species throughout the broad region that I traversed. Fourteen species were found nesting, namely, — Mallard, Gadwall, Baldpate, Green-winged Teal, Blue-winged Teal, Shoveller, Pintail, Redhead, Canvas-back, Lesser Scaup, Ring-neck, American Golden-eye, White-winged Scoter, and Ruddy Duck.

As nearly all the land in the region visited has been, or is being, taken up by settlers, the Anatidæ are on the wane in the breeding season, according to all accounts. Yet I was surprised at

their abundance and general distribution. I visited five or six different localities, aside from Devil's Lake, where the Canada Goose still breeds, and found several nests. A few Swans are yet reported by residents around Devil's Lake during the nesting season. Reports of their nesting in or near the Turtle Mountain country I failed to verify, though I think they have done so in recent years, and a few may yet, further west than I went.

I should classify the Ducks as to their occurrence in the breeding season in the following groups: —

1. *Abundant:* — Blue-winged Teal, Shoveller, Mallard, and Pin-tail. These were seen in nearly every puddle large enough for a Duck to swim in, as well as in all larger bodies of water.

2. *Common:*—Gadwall, Baldpate, Red-head, and Lesser Scaup. These were found about most of the larger sloughs and lakes, and many of the smaller.

3. *Locally common:* — Canvas-back, Ruddy, American Golden-eye, and White-winged Scoter, — the latter only in the Devil's Lake region.

4. *Rare:* — Green-winged Teal, Greater Scaup, Ring-neck, Wood Duck, and Hooded Merganser.

The Hooded Merganser (*Lophodytes cucullatus*) I did not meet on this trip, but in 1890, about the first of June, I came close upon a pair swimming in the Sheyenne River. The Wood Duck I noted but once,— a male, in the Goose River. I did not find the Buffle-head.

The only specimen of the Ring-necked Duck (*Aythya affinis*) was encountered in the Turtle Mountains, on June 14, when I was so fortunate as to start a female from her nest. It was in a reedy, boggy bayou, or arm of a lake, which was full of Bitterns, Black Terns, and Bronzed, Red-winged, and Yellow-headed Blackbirds. I was on my way out to photograph a Bittern's nest already found, and was struggling along more than up to my knees in mud and water, when a smallish Duck flushed almost at my feet from some thick, dead rushes, disclosing twelve buffy eggs, nearly fresh. The clear view within a yard of the pearl gray speculum and the total absence of white on the wing told the story. She alighted near by in open water, and gave me and my companion such fine opportunity to study her with the glass

and note every detail of her plumage, both as she sat and as she flew back and forth before us, that it was not necessary to sacrifice her for identification. Nothing was seen of the male.

I met the Green-winged Teal (*Nettion carolinensis*) on two occasions. The first time was in Steele County on May 11, when I came upon a pair sitting with some of the other Teal, Shovellers, and Pintails in a small pond close to a farm-house. The other instance was on June 20, at Rolla, near the Turtle Mountains, when, investigating a small, reedy prairie-slough, I came upon a female manifesting great anxiety, and soon drove from the tall reeds her brood of eight young. For a quarter of an hour that mother flapped, limped, and dragged herself around, at times so close to me that I could almost touch her. The ducklings were of very tender age.

The Greater Scaup (*Aythya marila*) I am confident of meeting in considerable numbers in one large reedy slough not far from Devil's Lake, both in May and towards the end of June. The Lesser Scaup was there too, and I could not but notice the difference in size between them. My last visit, at the breeding time, had to be very brief, and I did not happen upon any nest. In this one slough were ten species of Ducks, all in good numbers. The place was fairly alive with Ducks, as were many other similar localities that I came across in my travels.

The White-winged Scoter (*Oidemia deglandi*) I found quite common in two localities in the Devil's Lake region. During the first part of the season I searched in vain for nests. But on June 27 I solved the mystery by finding eight nests on a group of small islands. They contained 14, 13, 10, 10, 7, 6, 1, 0, eggs respectively. The last was a new nest ready for eggs. This shows that the bird is a very late breeder. In only three instances was the bird on the nest, — the first three mentioned. The eggs were all fresh, in the other instances being cold, covered with down, debris, and loam that had been scratched over them. The nest is the flimsiest built by any species of Duck that I have observed, — a mere depression in the bare earth, with a frail rim of dark down, weed-stems, and grass around it. The eggs are of a pinkish flesh-color, even after being blown. In every case the nest was under a clump of bushes, with woody stems, never in

weeds or grass. Six were under wild rose bushes, two under a common bush, of which I do not know the scientific name. The females found on the nests sat very close.

On these islands the same day I found about twenty nests each of the Baldpate and Lesser Scaup, built in clumps of grass or weeds, but not one under bushes. I shot several of the Scaups, but they were all *affinis*. Full sets of each varied from six to twelve, those of nine and ten being the commonest. The Baldpates' eggs were nearly all perfectly fresh, some sets incomplete. Most of the Scaup sets were moderately incubated, some of them considerably, though some, too, were fresh.

The American Golden-eye (*Clangula clangula americana*) is found breeding in small colonies in various patches of timber in the region of Devil's Lake. I also saw a few males in the Turtle Mountains, but did not find any nests. Sets of this species were completed from about May 20 to the first of June this year. In one colony most of the sets hatched from June 20 to 25. It was a beautiful sight to peer into a hollow tree and see a female with her newly hatched black and white ducklings. The little things were not afraid, but would patter about in the hollow, picking at something, or climb up on the back of their frightened parent, who would not attempt to fly out, but lie over on her side, look up, and hiss at the intruder. The next day the whole family would be gone.

The Ruddy Duck (*Erismatura jamaicensis*) and Canvas-back (*Aythya vallisneria*) were rather sparingly distributed, a few pairs to a slough or lake here and there. Where one was seen, the other was likely to be found. In one slough which I visited on May 21 I noticed numerous Ruddies in pairs swimming among the reeds, and out in the middle in open lanes of water I counted eleven pairs of Canvas-back, scattered here and there, and one lone male, whose partner had evidently begun her long vigil. I found eggs of the latter species slightly incubated on May 18 and June 18, and on June 28 saw a female with a brood of small young.

In regard to nesting dates of the different species, while there is, of course, a general average time at which each tends to breed, individuals are more or less erratic. Some Mallards, for example,

begin incubation early in May, but many wait until early or even middle June. I found nearly fresh sets of the Red-head in the first days of June, and two large fresh sets, on which incubation had not commenced, on the 28th of that month. My season's experience would indicate that the Mallard, Pintail, and Gadwall are, on the whole, the earliest breeders, a fair proportion, at least, beginning incubation by May 20. The Golden-eye, too, belongs among the early breeders. Most of the other species are fairly at work during the first week or ten days of June. The Scaups follow about June 15 to 20, the procession ending with the Baldpates and Scoters the last of June and first of July. This estimate is based solely on my observations of the season of 1898, and may not represent other years. The weather was very cold and wet all through. It seemed as though many of the Ducks of all species would never settle down to breeding. Hundreds and hundreds of all kinds remained paired up to the middle of June.

The laying of different species in each others' nests was interesting. I found Red-head's eggs in a Canvas-back's nest, Ruddy's eggs twice in Red-head's, Lesser Scaup's in a Shoveller's and what I took to be Shoveller's eggs in the nest of a Baldpate.

I did not notice any special localization of the species in the regions visited, except of Scoters and Golden-eyes, which has already been described. The other species were found everywhere in the same comparative abundance wherever the conditions as to water were suited to their habits. All Ducks were scarce in the older settled country in the extreme eastern part of the State, at least in those parts of it I visited. Few also were found along the rivers, as compared with the prairie lakes and sloughs. Despite glowing accounts of the abundance of Ducks in the Turtle Mountain lakes, I found them almost entirely absent, meeting only scattered individuals. The country is all timbered, and the stony shores of the lakes offer few good nesting sites. The collector will find the typical species there to be the Loon, Holboell's Grebe, Bittern, Red-tailed Hawk, Sapsucker, Purple Martin, and various interesting, as well as rare, small birds.

SOME PHILADELPHIA ORNITHOLOGICAL COLLECTIONS AND COLLECTORS, 1784–1850.[1]

BY WITMER STONE.

ORNITHOLOGICAL study has for so many years centered around the city of Washington and the National Museum, that many of our ornithologists have well nigh forgotten, while some perhaps have never known, that during the first half of the present century Philadelphia stood preëminent in the American ornithological world.

The large majority of our early ornithologists were Philadelphians, either by birth or residence, and with the exception of such works as the 'Birds of America' and the several Reports of Government Exploring Expeditions, nearly all the contributions to ornithology appeared in the 'Journal' and 'Proceedings' of the Academy of Natural Sciences of Philadelphia. In fact, every American ornithologist of note, from Audubon to Baird, and the various naturalists of the Pacific R. R. Surveys, appears as a contributor to these journals.

The ornithological collection of the Philadelphia Academy in 1850 was not only far ahead of any other in America but was considered by such an eminent authority as Philip Lutley Sclater to be "superior to that of any museum in Europe and therefore the most perfect in existence."

In view of the interest that attaches to these early collections which are so closely associated with the beginnings of bird study in America, it has seemed to me that it would be interesting and fitting to the present occasion to look a little into the history of the collections and of the men to whom they owe their existence.

Alexander Wilson, from whom systematic American ornithology may be said to date, came to Philadephia in 1794, and though it was fourteen years before the first part of his work appeared in print, he had already announced his intention of making "a collection of all our finest birds" as early as 1803.

[1] Read before the Sixteenth Congress of the American Ornithologists' Union, Washington, D. C., Nov. 15, 1898.

The Philadelphia Academy was not founded until the year before Wilson's death in 1813, so that he had no association with it as he undoubtedly would have had had he lived longer.

The only museum in Philadelphia during his time was the famous Peale's Museum. Of this he makes frequent mention in his writings, and here he deposited many of the specimens which served as the types of the new species described and figured in the 'American Ornithology.'

The birds secured by Thomas Say on Major Long's expedition to the Rocky Mountains in 1819–20 seem to have likewise been deposited in Peale's Museum, as Bonaparte in his continuation of Wilson's work figured several of Say's birds and refers by numbers to specimens in the museum. The single fact that Wilson's and Say's types were included in the Peale collection makes its history of much importance to us to-day, but the many other historical associations connected with the museum greatly increase its interest.

Peale's Museum was originally opened in 1784, then consisting mainly of the paintings of the proprietor and artist, Charles Wilson Peale; later from time to time various natural curiosities were added, and the museum was moved several times as more commodious quarters were required. In 1821 its name was changed to the Philadelphia Museum, and it was under the management of a company composed mainly of Peale's sons, including Titian Peale, the ornithologist of the U. S. Exploring Expedition.

In the early days of the museum Peale attempted to open it on Sundays, which naturally brought forth heavy criticism from the public press, to counteract which he had a sign prepared for display on the Sabbath, bearing the legend: "Here the wonderful works of the Divinity may be contemplated with pleasure and advantage. Let no one enter to-day with any other view."

In 1794 we learn that a small zoölogical garden was started in connection with the museum proper, the chief attraction being a Bald Eagle, with a sign "Feed me well and I 'll live 100 years," from which we infer that the animals were largely dependent for subsistence upon the liberality of the visitors.

One of the original catalogues published in April, 1805, and

still preserved in the library of the Historical Society of Pennsylvania, contains an interesting account of the collections, and as many of us are concerned with beasts of the earth as well as birds of the air I may be pardoned for quoting the paragraph on the mammals as well as that relating to the birds: —

"Among the most remarkable of the Quadrupeds are — The Long-clawed Grisly Bear from the source of the Missouri. The American Buffaloe or Bison, the Great Anteater (7 ft. 7 ins from snout to tip of tail). The Ourang Outang or wild man of the woods. The crested Porcupine, some of whose quills measure 18 ins, the American and New Holland ditto, Madagascar Bats (measuring 4 ft. from tip to tip). The Hooded Bat etc etc. The Lama or Camel of South America, the untameable Hyaena and fierce Jackall. American Elks, the Picary remarkable for a secretory organ on its back. The slow moving Bradypus or Sloth, Antelopes from Africa, the Indian Musk of astonishing agility and the Kangaroo or Opossum from Botany Bay, etc."

"All the birds are in glass cases, the insides of which are painted to represent appropriate scenery, Mountains, Plains, or Waters, the birds being placed on branches or artificial rocks.

"There are now in the collection (including many nondescripts) perhaps all the birds belonging to the middle, many of which likewise belong to the northern and southern States and a considerable number from South America, Europe, Africa, Asia and New Holland and the newly discovered islands in the south seas. The number exceeds 760 without the admission of any duplicates, contained in 140 cases."

One of the most famous attractions of Peale's Museum was the mounted skeleton of a mastodon, erected by one of Peale's sons, who celebrated the completion of the work by given a dinner to twelve of his friends, the table as well as a piano being placed on a platform inside the body cavity and supported on the ribs.

Like many similar undertakings, the Museum company by a too lavish expenditure of money on their last building became involved in debt and after a vain effort to make the museum self-sustaining by adding musical and other attractions they were finally compelled to close the doors in 1844.

The decline of the museum and its passage through successive

stages of museum proper, lecture hall, music hall, and variety stage, seems to have been so gradual that the final closing of the enterprise caused little comment. No record has been kept of the disposal of the specimens, and all efforts to trace the history of the Wilson and Say types have proved futile. All that seems to be known is that part of the natural history material was purchased by P. T. Barnum and was later burnt in his memorable fire in New York while other parts of the collections went to Boston, Baltimore, and Lancaster. The only types from the Peale collections that have been preserved, so far as I am aware, are Wilson's Broad-winged Hawk and Mississippi Kite, both of which are in the Philadelphia Academy labelled as having been obtained by exchange from Peale's Museum.

By 1825 the Academy of Natural Sciences was sharing the attention of the scientific world with the older Museum of Peale. It had become firmly established and was doing excellent work, not only in ornithology but in many other branches, and had enrolled in its membership all the prominent American naturalists of the time, many of whom are familiar to us to-day as pioneers in their respective specialties.

Curiously enough there is preserved an account of a meeting of the Academy held at this time, written by Dr. Edmund Porter of Frenchtown, N. J., in a letter to Dr. Thomas Miner of Haddam, Conn., dated Oct. 25, 1825, from which we can gain some idea of the personnel of the Academy meetings of this period. Dr. Porter writes: "A few evenings since I was associated with a society of gentlemen, members of the Academy of Natural Sciences. There were present fifteen or twenty. Among the number was La Suer, Rafanesque, Say, Peale, Pattison, Harlan and Chas. Lucien Bonaparte.

"Among this collection life was most strikingly exemplified. — *La Suer*, with a countenance weather-beaten and worn, looked on, for the muscles of his ironbound visage seemed as incapable of motion, as those on the medals, struck in the age of Julius Caesar. *Rafanesque* has a fine black eye, rather bald, and black hair, and withal is rather corpulent. I was informed that he was a native of Constantinople. At present he lives in Kentucky. *Dr. Harlan* is a spruce young man and has written a book.

Peale is the son of the original proprietor of the Philadelphia Museum, and one who visited the Rocky Mountains with Major Long; he is a young man, and has no remarkable indications of countenance to distinguish him. *Say*, who was his companion in the same expedition, is an extremely interesting man; to him I am particularly obligated for showing me their Museum and Library. I think he told me that their society had published nine volumes.... *Bonaparte* is the son of Lucien Bonaparte and nephew to the Emperor Napoleon; he is a little set, blackeyed fellow, quite talkative, and withal an interesting and companionable fellow. He devotes his attention to ornithology and has published a continuation of Wilson's work on the above subject.... *Hays*, an interesting Jew, delivered a lecture on mineralogy. He had collected his specimens in the Catskill Mountains. C. L. Bonaparte read a memoir on the 'Golden Plover.' To a novice it seems curious, that men of the first intellect should pay so much attention to web-footed gentry with wings.

"A Latin letter was read by *Mr. Collins* descriptive of a certain plant, growing on the waters of the Arkansaw; for my part I did not understand much of it — however it was to those who did not the less valuable."[1]

The attendance at this meeting was indeed a remarkable assemblage. As an ornithologist Bonaparte was by far the most celebrated, and though at this date he was but twenty-two years of age he had already published the first volume of his 'American Ornithology' and laid the foundations for the study of nomenclature and synonymy which has to day developed to such formidable proportions. Say and Peale both made their mark in ornithology, the former in his descriptions of the birds obtained on Long's expedition and the latter in the report on the birds of the U. S. Exploring Expedition to the South Seas. Peale was also famous as a collector, and many of the novelties described by Bonaparte owed their discovery to his energetic labors in the field.

[1] Penna. Mag. of Hist. and Biography, Vol. XVI, p. 249 (July 1892). Reference to the manuscript minutes of the Academy shows that this meeting occurred on Oct. 11. George Ord presided, and among the other members present were Dr. Godman and S. G. Morton.

Of all the participants in that meeting of 1825, however, Rafinesque stands out as the most striking character. Eccentric and egotistical to the last degree, he attempted to cover the whole field of science, history, and finance. His scientific works were for the most part ignored by his contemporaries, and in return he handled them without mercy. We can picture their mingled pity and contempt when Rafinesque wrote, "I consider myself endowed with a sagacity for the perception of generic and specific differences far in advance of any man of my time," and yet have we not to-day to a great extent the same views which he held on these matters, and are we not resurrecting many of his names which for nearly a century have been allowed to rest as the vagaries of an erratic mind?

Fortunately he touched but lightly upon ornithology, and we are spared the irritation which his numerous and abbreviated diagnoses produce in the minds of our botanists, conchologists and mammalogists.

The birds which were collected on the Long Expedition and described by Say were, as already explained, deposited in Peale's Museum and not in the Academy as has been often supposed, this action being in all probability due to the influence of Titian Peale who accompained the expedition and doubtless himself collected the specimens.

The failure to obtain the Rocky Mountain collection was not much felt at the Academy, as they soon received a far richer collection of western birds than that made by Long's expedition.

In 1834 Dr. John K. Townsend, already an active ornithologist at the Academy, undertook a journey to the mouth of the Columbia River. He was accompanied by Thomas Nuttall, who at that time was mainly interested in botany, and apparently allowed Townsend a clear field among the birds. Nuttall returned in the following year after visiting the Hawaiian Islands and California. Townsend, however, did not reach home until the close of 1836, visiting, meantime, Hawaii, some of the other Pacific Islands, and Chili.

Townsend's collection was the most important yet secured in western North America and the specimens subsequently served as the types of new species described not only by himself, but by Audubon, Nuttall, Cassin, and Titian Peale.

Some of the incidents connected with the history of this collection are very entertaining. It seems that such specimens as Townsend had secured up to the time of Nuttall's departure were sent home, in his care, at any rate they were in Philadelphia in 1836 — presumably at the Academy.

Audubon learned of this and at once hastened thither, being anxious to secure the novelties for publication in his great work then well under way.

He had already seen Nuttall in Boston and obtained specimens of such new species as he had brought; apparently only *Agelaius tricolor* and *Picus nuttalli*. That Nuttall did not secure more specimens is doubtless due, as Audubon states, to the fact that "he was not in the habit of carrying a gun on his rambles" — a custom which, though it apparently did not appeal very strongly to Audubon, would win unbounded admiration from the societies which bear his name to-day.

When Audubon reached Philadelphia he was deeply disgusted because Townsend's friends quite naturally would not allow him to publish the new species which this energetic explorer had secured, thinking that they had best remain undescribed until their discoverer returned to take them in hand personally.

Notwithstanding that Audubon claimed to have very little care for priority in the naming of species, his desire to publish these birds was intense, and he says: "Having obtained access to the collection I turned over and over the new and rare species but he (Townsend) was absent at Fort Vancouver on the shores of the Columbia River, Thomas Nuttall had not yet come from Boston and loud murmurs were uttered by the *soidisant* friends of science, who objected to my seeing, much less portraying and describing, these valuable relics of birds, many of which had not yet been introduced into our fauna. The traveller's apetite is much increased by the knowledge of the distance which he has to tramp before he can obtain a meal; and with me the desire of obtaining the specimens in question increased in proportion to the difficulties that presented themselves." After summoning to his aid Thos. Nuttall, who had then arrived in Philadelphia, Drs. Pickering, Harlan, Morton, McMurtrie, Trudeau and Edw.

Harris,[1] an arrangement was made whereby Audubon and Nuttall jointly were to prepare diagnoses of the new species for publication in the 'Journal' of the Academy under Townsend's name as author, after which Audubon (or Edw. Harris for him) was allowed to purchase the duplicates for use in making the plates for the 'Birds of America.'

This plan was carried out and Townsend was honored by having one of the new birds named after him, but being himself the ostensible author of the paper, he is placed in the embarrassing position of having named the bird after himself.

Most of the birds subsequently collected by Townsend seem to have gone direct to Audubon and were published by him in the 'Birds of America,' the manuscript notes of both Townsend and Nuttall furnishing most of the text.

That the treatment of these birds by Audubon was not altogether to Townsend's liking is evinced by a paper of his in the Academy's 'Journal' after his return, as well as by MS. notes in the Academy's copy of Audubon's work, wherein it appears that certain of Townsend's notes were mixed and published under the wrong birds. Matters of nomenclature also worried him, since he claims that *Agelaius tricolor* was Nuttall's MS. name and should have been credited to him, and that Audubon appropriated it to himself. By our present rulings on MS. names, however, I fear Nuttall would have been no better off to-day than if Audubon had acted as Townsend thought just.

The ultimate history of these types of Townsend and Audubon is interesting. The former nearly all remain at the Philadelphia Academy, while the Audubon specimens were divided, part being given to Edw. Harris and part to Prof. Baird. Subsequently these were presented, respectively, to the Philadelphia Academy and the National Museum.

This collection was the first notable contribution to the Academy's cabinet. By 1837, however, it contained about 1000 specimens, and in the succeeding ten years about 550 more were added. The ornithologists who appeared on the field during this period were John Cassin, S. F. Baird, A. L. Heermann, William Gambel, and S. W. Woodhouse.

[1] Preface to the fourth volume of the 'Ornithologicial Biography.'

In 1846 the collection attracted the interest of a man who, as a patron of ornithology, did more to advance the science in America than any other individual, but who, owing to his extreme modesty and aversion to publishing the results of his researches is very little known to-day outside of the Academy. This was Thomas B. Wilson, a wealthy member of the institution and afterwards its President. By his great liberality the Academy's collections in many departments were largely increased, and the library was rendered as complete as it was possible to make it. It was in ornithology, however, that he became especially interested. Through the agency of his brother, Edward Wilson, residing in London, he entered into negotiations with a prominent taxidermist of that city to furnish him with birds in lots of 100 at so much a piece, the price to vary with each lot in accordance with the rarity of the species.

Before closing the bargain, however, he asked the advice of Dr. J. E. Gray of the British Museum and was strongly recommended to purchase some large collection entire as a much more economical investment. Dr. Gray further suggested the collection of Victor Massena, Duc di Rivoli and Prince d'Esling, which was then in the market, and finally agreed to do his best to negotiate the purchase, as he was at that time about to visit Paris. His results are best told in his own words:

"On my arrival in Paris, I put up at Meurice's, and at once sent a messenger with a note to the Prince Massena, saying that I was willing to purchase the collection of birds at the rate of four francs per specimen, and that I was prepared to pay for it in ready money. While sitting at dinner at the table d'hote, an aide-de-camp came in, all green and gold, with a cocked hat and a large white feather, to inquire for me, with a message from the Prince to inquire what I intended by ready money, and, when I explained, to inquire if I was ready to pay the sum (50,000 francs) that evening. I said no, that I had only just arrived in Paris and had not delivered my letter of credit to the banker, but I would be ready to pay as soon as the bank opened the next morning. He said the bank opened early, and would I come to the prince at seven o'clock? to which I assented. I immediately sent my letter of credit to Messrs. Green, and mentioned

the sum that I should draw for early the next morning. I kept my appointment, the prince met me, declared the collection agreed with the catalogue, on which I gave his highness a cheque on Messrs. Green and he gave me a receipt and handed me the keys of the cases, and I sealed them up, the affair being settled in a few minutes.

"Having finished my work sooner than I expected, and it still being early, I went to call on my dear old friend Prof. DeBlainville and had breakfast with him. He asked me what brought me to Paris. I said, among other things, to purchase the Prince Massena's Collection of Birds, which I had done; on which he became much excited and said that the French Government had intended to purchase it and that he must take measures to prevent its leaving France. I said I was not aware that the Government wanted it for I knew it had been for several years in the market, and it was now too late, as I had paid for the collection, which was now in my possession, and I showed him the keys of the cases and the receipt for the money. At length my good and kind friend became pacified."[1]

This collection comprised some 12,500 specimens, and its acquisition, as Thoreau[2] says, "by a Yankee, over all the crowned heads of Europe," was greatly to the credit of American energy and enterprise.

Dr. Wilson followed this purchase with that of the Gould collection of Australian Birds, and the Boys Indian collection, besides securing many small collections, so that when the whole was formally presented to the Academy it comprised about 26,000 specimens, including some 600 types of Gould, Cassin, Bonaparte, Temminck, Lafresnay, Vieillot, Lesson, Smith, Sclater, Verreaux, and Strickland.

Such a collection as this, brought together at such an early date, was indeed wonderful, and though John Cassin worked at it until the time of his death, and described some 200 new species, there remained probably several hundred doubtfully named birds

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[1] Annals and Magazine of Nat. Hist., 1869, Vol. III, p. 317.

[2] Journal, Nov. 21, 1854, after a visit to the Academy.

which subsequent and more extended collections have shown to be distinct species.

Cassin has been justly termed by Dr. Coues "the only ornithologist this country has ever produced who was as familiar with the birds of the Old World as with those of America," but the opportunity of attaining the great knowledge which he possessed was offered by the liberality of Thomas B. Wilson.

Had Dr. Wilson endowed his famous collection sufficiently to have ensured a permanent curator, Philadelphia's ornithological history would have gone on without a break, but as it was, the death of Cassin in 1869, marked the close of active work, and for twenty years the collection remained almost untouched by ornithologists. There arose a new generation of bird students, the 'Bulletin' of the Nuttall Club appeared, the A. O. U. was organized, and meantime the Philadelphia collection was all but forgotten. Many specimens were there which would have been of the greatest interest to the contributors to the 'Nuttall Bulletin' and the early numbers of 'The Auk'; though much of their importance has been lost to-day owing to the systematic collecting in every part of our country, whereby many of the great rarities of past years have become familiar to all.

Though it be stretching my theme unduly, I may be permitted to add that the collection is still in a remarkably good state of preservation, and that scarcely any of the types have been lost, while to the 26,000 specimens of old, the past ten years have added 18,000 more.

It was not my intention to speak of all the ornithologists or all the individual collections which have come to Philadelphia, and I will not therefore weary you with more details, but in closing I must make some allusion to a small collection of skins which came to the Academy during the past year as a part of the legacy of the late Edward D. Cope. This was a collection formed by Bernard Hoopes, and included the celebrated series of Warblers formerly the property of Chas. S. Turnbull, author of the 'Birds of East Pennsylvania and New Jersey,' both of these collectors being contemporaries of Cassin.

This Warbler collection was considered the finest in existence in Turnbull's time and contains such rarities as the Olive,

Hermit, and Swainson Warblers. There is also the specimen of Townsend's Warbler from Chester Co., Pennsylvania, the only one taken east of the Rocky Mountains, which passed through several hands, selling for fabulous prices. There is also an Ipswich Sparrow, obviously secured long before the type was obtained.

In contemplating these specimens which have reposed in their old cabinet for nearly 30 years untouched by the hands of ornithologists, their antiquated labels oblivious to the edicts of the A. O. U. committee on nomenclature, one seems to be almost in touch with the past generation. Besides those I have mentioned are some Philadelphia Vireos and other birds collected by Prof. Cope at the time he was just starting upon his scientific career and presented by him to Turnbull. One cannot but wonder what would have been the outcome had Prof. Cope in later years continued to turn his attention to ornithology instead of neglecting it, as he did almost entirely.

I recall one instance; some two years before his death, when I was engaged in systematizing a heterogeneous collection of birds he entered the room and in the course of conversation took exception to some of the characters used in their classification. "What you want," he said, "are alcoholic specimens; then you can get at their proper relationships;" and added, with a smile, "some day perhaps I shall get at the birds and straighten them all out." But other fields continued to demand his attention and Philadelphia was prevented from adding his name to her already long list of notable ornithologists.

GENERAL NOTES.

Thalassidroma castro of Harcourt. — Now that the question of *Thalassidroma castro vs. Oceanodroma cryptoleucura* has been brought up by Mr. Grant in 'The Ibis,' and passed upon, as far as the A. O. U. 'Check-List' is concerned, by the A. O. U. Committee on Classification, ornithologists may wish to consult the original description, which will be more generally accessible if reprinted in 'The Auk.' It is as follows: "It differs from Leach's petrel, to which it is closely allied, in being larger;

it has a shorter wing and shorter tarsus, though its entire length is greater; it has also a square tail instead of a forked one. It measures seven inches and a half entire length; from the carpus to the end of the wing, five inches and three quarters; tarsus, three-quarters of an inch. I have called it *Thalassidroma castro*, as I am not aware that it has ever been described before." (A Sketch of Madeira, 1851, 123.) The specific name is derived from that of "*Roque de Castro*," given by the natives. The type locality is the Desertas Islands, near Madeira. — CHAS. W. RICHMOND, *Washington, D. C.*

Pelecanus occidentalis vs. P. fuscus. — Although "*Pelecanus fuscus*," credited to Linnæus, Syst. Nat., ed. 12, 1766, 215, has stood in our 'Check-List' since 1886, a glance at the first-mentioned work will convince any one that Linnæus used no such name. He divides *Pelecanus onocrotalus* into two varieties, **α**. *orientalis*, and **β**. *occidentalis;* under the latter are cited the "*Onocrotalus s. Pelecanus fuscus*" of Sloane's 'Jamaica,' the "*Onocrotalus americanus*" of Edwards, the "*Pelecanus subfuscus, gula distensili*" of Brown's 'Jamaica,' etc. The habitat of **β** is given as "America," and the references belong mainly to the Brown Pelican of Eastern North America. Varietal names, as used by Linnæus, were italicized and designated by a Greek letter instead of a separate number, but all such names were binomial marginal ones, and ought to be recognized. If ornithologists accept this view our Brown Pelican should stand as *Pelecanus occidentalis*; otherwise the *P. fuscus* of the 'Check-List' must be credited to Gmelin. — CHAS. W. RICHMOND, *Washington, D. C.*

Old Squaw (*Clangula hyemalis*) **in Indiana.** — A few records have been given of individuals taken in the State, and in all instances they were probably blown inland by severe storms off Lake Michigan, where they are usually abundant in the winter season.

On Feb. 12, 1899, during intensely cold weather, a flock of thirteen was killed at English Lake, Ind., some thirty-five miles directly south of Lake Michigan. There was no open water, except a small space, some thirty yards square, where the ice had been cut and taken out for storing, and here the flock suddenly alighted. They were evidently in an exhausted condition, hunting for open water, as they paid no attention to twenty or thirty men working around the hole and floating out the ice, and only dove when struck at with pike poles. A gun was soon procured, and the whole flock dispatched, and a male specimen was sent to me. The following morning, February 13, three more Ducks of this species attempted to alight in the same hole, which had been kept open by the ice cutters, but a hungry Bald Eagle, who has a nest a half mile distant, stooped to them, without success however, and they continued a hurried flight over the frozen marshes.

I have never known of a specimen taken before on the Kankakee Marshes. As they do not appear in any numbers at the southern end of Lake Michigan until early in December, an unusually early record is one killed at Calumet Heights, Ind., near the lake shore, on Oct. 29, 1898, by Dr. A. W. Harlan. — RUTHVEN DEANE, *Chicago, Ill.*

White-winged Scoters (*Oidemia deglandi*). — I am informed that a large flight of adult White-winged Scoters going south was seen at Cohasset, Massachusetts, Oct. 2, 1898. The birds were flying high, with a gentle southeast wind. A dense fog in the afternoon prevented them from being seen, up to which time the flight continued. — GEORGE H. MACKAY, *Nantucket, Mass.*

Gallinago major versus Gallinago media. — In 'The Auk,' for April, 1897, Dr. Coues sets forth the proper claims of the Greater Snipe to a place in the A. O. U. Check-List, to which it has accordingly been admitted by the Committee (Auk, Jan., 1899, XVI, 105), under the name *Gallinago major* (Gmelin). But as Dr. Coues himself admits, *major* is not the earliest name for the species; yet in spite of this he urges its adoption, — a clear violation of the law of priority. *Scolopax media* Frisch (Vorst. Vög. Deutschl., 1763, pl. 228) as also *Gallinago media* Gerini (Orn. Meth. Dig., 1773, IV, 59, pl. cdxlvi) seem to apply to this bird, and although I have not been able to verify these references, there is apparently no valid reason for rejecting the specific name they impose. Even should this not be so, *media* must still be used for the species, since *Scolopax media* Latham, Gen. Syn. Suppl., 1787, I, 292, is of undoubted pertinence, and antedates *Scolopax major* Gmelin by one year. — HARRY C. OBERHOLSER, *Washington D. C.*

Sexual Difference in Size of the Pectoral Sandpiper (*Tringa maculata*). — I have for a number of summers noticed that the local shore bird gunners at Newport and Jamestown, R. I., speak of two sizes of Pectoral Sandpipers or, as they call the bird, Kreikers. They go so far as not only to say this is a big or little Kreiker after the bird is in hand, but say here comes a big or little one as the bird is seen flying toward the blind. I have just examined a large series, fifty specimens, from throughout the range of the species including both spring and autumn birds, in regard to this point of size and find that twenty-five females average: Wing, 4.95; tarsus, 1.05; and bill, 1.07; and twenty-five males: Wing, 5.45; tarsus, 1.11; bill, 1.12; or, that in the males the wing averages .50, the tarsus, .06, and the bill .05 larger than in the females. Mr. H. B. Bigelow, who has taken a great number of these birds, calls my attention to the fact that the little and big, that is females and males, flock together and that the little birds always appear in the autumn a week or so before the big ones; the latter has not been my experience. I cannot find a manual

that mentions any difference in the size of the sexes of this species and therefore believe it worthy of note. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The 1898 Migration of the Golden Plover (*Charadrius dominicus*) and Eskimo Curlew (*Numenius borealis*) in Massachusetts. — I have little to communicate this year regarding the movements of these birds going south. Their scarcity here for a number of years past is most discouraging. During the migrating period weather favorable for their landing occurred several times, notwithstanding which only scattering birds have been noted. Personally I have not seen any flying. As far as I am aware the first Golden Plovers seen on Nantucket this season were four birds on August 12. On August 18, a flock containing about twenty-five birds, was reported to have been seen, two of which were said to be Eskimo Curlews. (As far as I know these two birds were the only ones seen during the entire season.) On August 28, three Golden Plovers were seen at the extreme west end of Nantucket Island, one of which was killed. On September 1, twelve were seen flying south on migration; on September 12, wind northeast and cold, a flock of Plovers estimated to contain sixty birds, were said to have been seen at the north side of Nantucket. On this same date eleven Plovers were killed from a flock of sixteen on Tuckernuck Island. These birds were sent to me; ten of them were young, the other was an adult. On September 15 seven young Plovers were seen at the eastern end of Nantucket, two of which were shot. On September 16, thirteen young birds were shot at the eastern end of the island. On Marthas Vineyard I have heard of but two Plovers being taken, one a young bird too emaciated to eat; no Eskimo Curlew seen. I have made enquiry of several of the large game dealers in Faneuil Hall Market, Boston, and have only learned of a stray Golden Plover or so, and not any Eskimo Curlew. The spring shooting of both these birds in the West, as also of the Bartramian Sandpipers, is to be greatly deplored. — GEORGE H. MACKAY, *Nantucket, Mass.*

Hybrid Grouse. — A hybrid *Dendragapus obscurus fuliginosus* × *Phasianus torquatus* was recently shot near this city and is at present on exhibition in one of the local gun stores. I could gain very little information as to the history of the specimen, save that it was alone, and was regarded as a freak, of more or less common occurrence. The bird was evidently a young male of the year, and had just begun to take on the fall garb, traces of which show through the young plumage. Above the bird shows the Grouse parentage more strongly than the Pheasant, the plumage being slaty black, somewhat barred with gray and buffy. Tail slaty, central feathers mottled, and lateral more or less edged with grayish brown. Central rectrices tipped with same. The tail is longer than in *Dendragapus*, and the central feathers show some tendency to extend

beyond the rest, and all are similar in shape to those of the Grouse, though showing the Pheasant character in being much narrower at the ends.

Below the characters of *Phasianus* are more pronounced. The chin, throat and upper neck are white, lower neck and breast black, sides buffy. The bare space about the eye is somewhat restricted, but similar to that in the young Pheasant. Tarsus about midway in length between the two genera, feathered for about three quarters of an inch below the tibia with whitish slaty. The spurs are present as small knobs only.

The bird being mounted, measurement was difficult, but it had every appearance of being larger than either of its parents.

Since writing the above I have learned of three other specimens, all similar to the one above described. Though I do not know the locality from which two of them came, the third, which was shot at Salem, could not have been from the same brood. All of these four specimens were shot within the last two months (October and November, 1898), and the report that such crosses are not uncommon would seem to have some foundation. The imported Pheasant often crosses with domestic fowls. — A. W. Anthony, *Portland, Oregon.*

The Number of Rectrices in Grouse. — In my recent paper on the Feather-tracts of North American Grouse and Quail (Proc. U. S. Nat. Mus., XXI, pp. 641-653), under the genus *Lagopus*, I made the statement that the rectrices are always 18. Mr. Manly Hardy of Brewer, Maine, has very kindly written me that his experience proves the statement to be an error. He says that in the last 20 years he has shot 15 or 20 Ruffed Grouse having 20 rectrices, and, he adds, "I have in every case found those having 20 rectrices to be exceptionally large males. While I cannot prove it, still it is my belief that none have this added pair until they are several years old. I well remember shooting three old 'drummers' in one afternoon in November, two of which had 20 tail-feathers..... One weighed 31 and the other 32 ounces..... Old cocks usually weigh from 24 to 26 ounces." It seems to me that these facts are of great importance in helping us to decide whether the Gallinæ with 12 rectrices are in that respect nearer the ancestral form than those with a larger number. At least they indicate that the number of rectrices may be *increased*, as well as *decreased*, and admit the possibility that increase in number of rectrices may be a form of specialization. — Hubert Lyman Clark, *Amherst, Mass.*

The Turkey Vulture (*Cathartes aura*) in Somerville, Mass. — Mr. F. H. Hosmer (who assures me that he knows the bird well) informs me that he saw three Turkey Buzzards, very high up in the air, in Somerville, Mass., on Sept. 25, 1898. They were headed south. On the 24th strong southwest winds prevailed in this vicinity, previous to which there had been high winds at the south. — George H. Mackay, *Nantucket, Mass.*

Black Gyrfalcon (*Falco rusticolus obsoletus*) **in Maine.** — A fine female Black Gryfalcon was shot in this city on Dec. 21, 1898. The bird was seen in pursuit of a domestic pigeon by Adrian De Costa, who went to his house for his gun and shot the specimen, which showed no fear, and appeared to entirely disregard his presence. Mr. De Costa sold the bird to S. L. Crosby, the taxidermist, from whom I obtained it for my collection. — HARRY MERRILL, *Bangor, Maine.*

The Specific Name of Falco regulus. — As the Merlin is included in the list of North American birds, although only by reason of accidental occurrence in Greenland, it seems advisable again to call attention to the fact that *regulus* is not its earliest specific title. Indeed *regulus* is antedated by two other names, — *Falco æsalon* Tunstall (Orn. Brit., 1771, p. 1) and *Accipiter merillus* Gerini (Orn. Meth. Dig., 1767, I, 51, pll. xviii, xix), by the latter of which it apparently must be supplanted. This has already been pointed out by Mr. Seebohm (Hist. Brit. Birds, I, 34); as well as more recently by Dr. Prazák (Journ. f. Ornith., 1898, 157), who treats the subject in some detail; and although it has not been possible in the present connection to verify the reference to Gerini, it seems almost certain that his name will have to be accepted, and the species stand as *Falco merillus.* — HARRY C. OBERHOLSER, *Washington, D. C.*

Habits of the Blue Jay (*Cyanocitta cristata*). — Under this title, Mr. Fred H. Kennard recorded an interesting note in 'The Auk' for July, 1898, page 269. It must be generally acknowledged that the nesting site described is very unusual, but strange enough, my attention was called last June to a nest of this Jay, built under a piazza roof of an occupied dwelling, placed on the capitol of a pillar, and among the stems of a Wisteria vine, almost exactly as described by Mr. Kennard. I am indebted to my young friend, Flint Drew, who lived at the house in Highland Park, Ill., for giving me the opportunity of examining the nest, which at that time contained young.

As the general habits of the Massachusetts and Illinois Jays differ very materially, and as our bird is more domestic, and lives near the haunts of man, it would not be so unusual to find their nests in such locations, although this is the first instance which now comes to my notice. — RUTHVEN DEANE, *Chicago, Ill.*

An Unusual Set of Song Sparrow's Eggs. — On June 28, 1898, I found a nest of *Melospiza fasciata* at Beverly Farms, Mass., containing eight eggs. They seemed to belong in two sets of four, distinguishable by a slight difference in color and markings. Incubation had begun in some eggs of each kind. — GEO. C. SHATTUCK, *Boston, Mass.*

The Names of the Song Sparrows. — The change of a well established scientific name is always to be deplored, and particularly when, as in the

present case, the alteration in a specific term makes necessary a corresponding correction throughout a long list of subspecies. Under our rules of nomenclature, however, there seems no doubt of the untenability of *Melospiza fasciata*; since *Fringilla fasciata* Gmelin (Syst. Nat., 1788, I, 922) used for the Song Sparrow, is preoccupied by *Fringilla fasciata* Müller (Syst. Nat., Anhang, 1776, 165), which is a synonym of *Spinus pinus*. The only available name for the eastern Song Sparrow is *Fringilla melodia* Wilson (Am. Orn., 1810, II, 125, pl. XVI, fig. 4), and the species consequently should be called *Melospiza melodia*.

Fringilla guttata Nuttall (Man. Orn., ed. 2, 1840, I, 581), which is now *Melospiza fasciata guttata*, is debarred by *Fringilla guttata* Vieillot (Nouv. Dict. d'Hist. Nat., 1817, XII, 233), for an Australian Weaver-bird. As the Rusty Song Sparrow seems to have no other name, it may be called *Melospiza melodia morphna*.

The Song Sparrows will then stand as follows:

Melospiza melodia melodia (Wilson).
Melospiza melodia fallax (Baird).
Melospiza melodia montana (Henshaw).
Melospiza melodia heermanni (Baird).
Melospiza melodia samuelis (Baird).
Melospiza melodia morphna Oberholser.
Melospiza melodia rufina (Bonaparte).
Melospiza melodia rivularis (Bryant).
Melospiza melodia graminea (Townsend).
Melospiza melodia clementæ (Townsend).
Melospiza melodia cooperi (Ridgway).
Melospiza melodia pusillula (Ridgway).
Melospiza melodia caurina (Ridgway).
Melospiza melodia mexicana Ridgway.
Melospiza melodia adusta (Nelson).
Melospiza melodia goldmani (Nelson).—HARRY C. OBERHOLSER, *Washington, D. C.*

On the name Xenocichla.—Of late years the term *Xenocichla* has been in quite general use for a group of Ethiopian Bulbuls, having as its type the *Dasycephala syndactyla* of Swainson. *Xenocichla* was founded by Hartlaub in his 'Orn. Westafricas,' 1857, p. 86, but in the list of additions and corrections on p. 272, the name is noted as being equivalent to *Bleda* Bonap. The exact place of publication of Bonaparte's name seems to have puzzled recent ornithologists, and we find it quoted at second hand and without date in Waterhouse's 'Index' and Sharpe's 'Catalogue of Birds.' The proper reference is Rev. et Mag. de Zool., Feb. 1857, 50, which antedates Hartlaub's work by at least two months. The type being the same in both cases, *Xenocichla* becomes a perfect synonym of *Bleda*, which should henceforth be used. The species of the genus, as recently restricted by Shelley, are *Bleda syndactyla* (Swains.),

B. poliocephala (Reichenow), *B. xavieri* (Oust.), *B. notata* (Cass.), *B. eximia* (Hartl.), and *B. canicapilla* (Hartl.). — CHAS. W. RICHMOND, *Washington, D. C.*

Barn Swallows (*Hirundo erythrogastra*). — Within a few yards of the house occupied by Mr. John R. Sandsbury during the time he is caring for the Terns on Muskeget Island, and where I make my headquarters when visiting there, is an old shed or boathouse which has several apertures. This shed has been used as a nesting place for the past six years by apparently the same pair of Barn Swallows. At my request Mr. S. made a few notes on these birds, which arrived this year (1898) on May 29. It is their custom to repair the old nest, they never having built any since the first one. Four young birds were hatched this season. The old birds would occasionally fly into the sitting-room of the house, but were always frightened on getting inside. When I was visiting Muskeget this summer (July 2–5, 1898), I found, in addition to the old pair of birds, still another pair, apparently birds of last year, assisting in feeding the four young ones in the nest. This they continued to do up to July 10, the date on which the young left the nest. On this date they were all flying about together, the young going at intervals to the nest to rest. On July 11, there were only the two original old birds and the four young ones, and they remained around until July 19, the young returning to the nest every night. The young birds were so tame that they would alight on, and even run over Mr. Sandsbury's fingers while he rested his hand upon a beam which was near the nest. They returned occasionally up to August 1, but were not so tame, alighting on top of the shed and on the clothes line near the house. At this latter date the group consisted of the two old birds and the four young. — GEORGE H. MACKAY, *Nantucket, Mass.*

Another Example of Curious Nesting of the American Redstart. — Mr. Verdi Burtch, in the October Auk, 1898, recorded a curious example of the American Redstart's nesting, and having had a somewhat similar experience, it may be of interest to record it.

June 3, 1898, I had been collecting about a swamp in the vicinity of Dorchester, Mass., and at noon sought the shade of a wood lot near. A female Redstart (*Setophaga ruticilla*) at once attracted my attention by her queer ways. I retired for a short distance and the bird settled upon a Vireo's nest, which was situated four and a half feet above the ground in a sapling. It contained five Redstart eggs. One of these was entirely buried beneath the others, in a thick lining of horse hair. The yolk of this egg had settled and hardened. The other four were fresh.

As numbers of Redstarts' eggs are annually stolen by boys from this wood, it may be possible that the following theory accounts for this strange thing. An incomplete set of Redstart eggs was taken; the female laid in the Vireo nest during the absence of the owners rather than deposit

her egg upon the ground. The Vireos deserted, and the Redstarts liking the nest lined it up with the usual material chosen in this locality and retained the nest as their own. The nest, I think, was the property of a pair of Yellow-throated Vireos (*Vireo flavifrons*) which I had often observed about. The nest and eggs are now in the collection of Mr. Brewster. — FRANCIS J. BIRTWELL, *Dorchester, Mass.*

Certhia familiaris americana, not Certhia f. fusca! — Dr. Coues has recently sought (Auk, April, 1897, XIV, 216) to resurrect the name *Certhia fusca* Barton (Fragments Nat. Hist. Penn., 1799, 11) and to establish it as the proper designation for the common Brown Creeper of eastern North America. His proposition unfortunately found favor with the A.O.U. Committee, and in the Ninth Supplement to the Check-List (Auk, Jan., 1899, XVI, 126) Barton's name supersedes the long-current *americana*. But *Certhia fusca* Barton, 1799, is preoccupied by *Certhia fusca* Gmelin, 1788 (Syst. Nat. I, 472) and therefore untenable. The next available name is apparently *Certhia americana* Bonaparte (Geog. & Comp. List, 1838, 11), so that the American Brown Creeper must be called, as heretofore, *Certhia familiaris americana*. — HARRY C. OBERHOLSER, *Washington, D. C.*

The Second Reference for Anorthura hiemalis pacifica. — In the Ninth Supplement to the A. O. U. Check-List (Auk, Jan., 1899, XVI, 125) the authority for the combination *Anorthura hiemalis pacifica* is given as Oberholser, Proc. U. S. Nat. Mus., Nov. 19, 1898, XXI, 421. This is not correct. The proper citation seems to be Ridgway, Proc. U. S. Nat. Mus., June 30, 1883, VI, 94. — HARRY C. OBERHOLSER, *Washington, D. C.*

Piranga rubra and Carpodacus mexicanus frontalis Preoccupied? — The change of *Dendroica cærulea* to *Dendroica rara* (Ridgway, Auk, Jan., 1897, XIV, 97), which was promptly accepted by the A. O. U. Committee, involves an interpretation of Canon XXXIII of the A. O. U. Code of Nomenclature to which little if any attention seems to have been called. It appears advisable at the present time to raise this question, inasmuch as it affects the validity of some other current names; and this the more as in regard to it there seems to be neither unanimity of opinion nor uniformity of practice. Briefly stated, it is this: in considering the tenability of specific names, so far as preoccupation is concerned, shall any account be taken of homomyms which are mere combinations, *i. e.*, not original descriptions? To illustrate: *Motacilla cærulea* of Linnæus, 1766, was called *Sylvia cærulea* by Latham in 1790, — evidently a simple transfer of Linnæus's species to another genus. Now, does this *Sylvia cærulea* of Latham, 1790, preclude the use of *Sylvia cærulea* Wilson, 1810, for another and widely different species, the former being now a *Polioptila*, the latter a *Dendroica*? Canon XXXIII is apparently quite explicit

upon this point, its text being as follows: "....a specific or subspecific name is to be changed when it has been applied to some other species of the same genus, or used previously in combination with the same generic name." The phrase, "or used previously in combination with the same generic name," seems to leave no doubt of its meaning; and a strictly literal interpretation of this clause will treat alike all combinations, whether or not they happen to be those of original descriptions.

Such being the case, there are two names in our North American List which must be changed. The first of these, *Piranga rubra*, for the Summer Tanager, is untenable because *Piranga rubra* was previously used by Vieillot, as well as by many succeeding authors, for the species now known as *Piranga erythromelas*. The rejection of *Piranga rubra* for the Summer Tanager permits its employment for the Scarlet Tanager; the former then becoming *Piranga æstiva*. This is rather a fortunate circumstance, for these two birds will thus bear the names so long in use before the publication of the first edition of the A. O. U. Check-List.

The specific term of *Carpodacus mexicanus frontalis* (*Fringilla frontalis* Say, Long's Exped. to Rocky Mts., 1824, II, 40) must give way on account of *Fringilla frontalis* Vieillot (Nouv. Dict. d'Hist. Nat. 1817, XII, 181), which is a synonym of *Sporopipes frontalis* (Daudin). The next available name seems to be *Carpodacus obscurus* McCall (Proc. Acad. Nat. Sci. Phila., June, 1851, 220), and the United States form of the House Finch will consequently become *Carpodacus mexicanus obscurus*. — HARRY C. OBERHOLSER, *Washington, D. C.*

Four Preoccupied Names. — *Psittacus augustus* Vigors, P. Z. S. (1836), Jan. 16, 1837, 80, for the Imperial Parrot of Dominica, is preoccupied by *Psittacus augustus* Shaw, Mus. Lever., 1792, 59, pl. 2. This will necessitate a new name for *Amazona augusta* (Vigors), which may be called *Amazona imperialis*, this name having stood for several years in Mr. Ridgway's MSS.

Pachyrhamphus similis was first used by Cherrie for a Nicaraguan Becard (Proc. U. S. Nat. Mus., XIV, 1891, 343) and its subsequent use by Mr. Salvin for a South American species (Novit. Zool., II, 1895, 13) renders the latter open to a new name. It may be called *Pachyrhamphus salvini*.

Blax, lately proposed by Reichenow (Ornith. Monats., II, 1894, 126) for an African Barbet, is preoccupied by two or three genera of the same name in insects (Thomson, 1860; Loew, 1872, etc.). It is proposed to use as a substitute *Blacops*,[1] with a single species, *Blacops gymnophthalmus* (Reichenow).

Bocagia of Shelley (Bull. Brit. Orn. Club, XVIII, May 26, 1894, xliii), for two species of African Shrikes, is untenable, there being a *Bocageia*

[1] Βλαξ, and ὤψ.

Girard, Jorn. Soc. Lisboa, III, 1893, 100, for a genus of Mollusks. Capt. Shelley's genus may be renamed *Antichromus*,[1] the two species being *Antichromus anchitæ* (Bocage), and *A. minutus* (Hartl.). — CHAS. W. RICHMOND, *Washington, D. C.*

New and Rare Birds in Kansas. — On June 12, 1898, Mr. R. Matthews, of Wichita, while enjoying an outing along the banks of the Arkansas River, some miles south of the city of Wichita, captured a specimen of Chuck-will's-widow, *Antrostomus carolinensis*. There is no doubt as to the identity, which was confirmed by Prof. Snow of Lawrence, to whom the specimen was submitted. This is the first record for the State, although the late Col. Goss and Prof. Popenoe were both confident that they had heard the notes of this bird.[2]

On August 16, 1898, Mr. F. E. Forbes of Topeka captured a fine male specimen of the Turnstone, *Arenaria interpres*, on the Kansas River near that place. The specimen was found alone and is an addition to the Kansas list.

About the middle of January, 1899, Prof. E. A. Popenoe of Berrytown, near Topeka, shot a pair of Bohemian Waxwings (*Ampelis garrulus*) from a flock of four. They were in company with some Cedar Waxwings, feeding on the berries of the ordinary red cedar. These are the first of these birds noted in the state for eighteen years; and there are only three other authentic records. They were previously taken at Fort Riley, by Dr. Hammond; at Ottawa, by Wm. Wheeler; and at Manhattan, by the writer. — D. E. LANTZ, *Chapman, Kan.*

More New Birds for Colorado. — Astragalinus psaltria mexicanus. A Goldfinch was shot near the city of Denver during the summer of 1888 by Mr. A. T. Allen, a taxidermist. He considered the bird to be *mexicanus*, and judging it to be out of its ordinary summer home he preserved the specimen. His identification has lately been confirmed by Prof. J. A. Allen who says that the specimen is not quite typical, but much nearer this form than any other. It is of course an accidental occurrence, as the species belongs in southern Texas and southward.

Branta canadensis minima. A typical specimen of this subspecies was shot April 10, 1898, by Mr. John F. Campion on a small lake near Loveland, Colorado. He presented it to the State Natural History

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[1] Ἀντί and χρῶμα.

[2] The head and wings of a female specimen of this species, taken at Wichita, Kansas, in 1898 (exact date not stated), were received recently at the American Museum of Natural History, New York, for identification, from Prof. L. L. Dyche, of the Kansas University. This adds a second authentic record for the Chuck-wills-widow in Kansas. — J. A. ALLEN.]

Society and it is now mounted in their collection at the State Capitol in Denver.

Junco montanus. — This new species was described by Mr. Ridgway about a year ago. He writes: "In our somewhat extensive series of *Junco montanus*, I find only one specimen from Colorado. This is a female, No. 109,943, U. S. N. M., collected at Pueblo, Oct. 29, 1886, by C. W. Beckham. There are several examples from New Mexico and Arizona; one from Fort Clark, Texas, two from El Paso, and one from the Sierra de los Patagone, Mexico. All are fall and winter birds." — W. W. Cook, *Fort Collins, Col.*

Some Additional New Mexican Birds. — In 'The Auk,' for October, 1898, Mr. W. I. Mitchell gives a list of the birds found by him in San Miguel County, New Mexico, during the summer of 1898. I spent about four months each summer in 1896 and 1897 at Fort Bayard, New Mexico, about 180 miles west and 200 miles south of where Mr. Mitchell conducted his observations, and give below a list of the birds found there which were not found by Mr. Mitchell in the vicinity of Las Vegas. These lists will tend to show that the boundary line of the range of some of the species mentioned comes between the two localities. The time I spent in New Mexico during the two summers ranged from the end of May to the middle of November, so that I was a little late for the breeding season, and it is probable that many of the birds which I do not give as breeding are really breeders in that locality.

The military reservation of Fort Bayard is a square, four miles each way, lying between the Black Range and the Santa Rita Mountains, and has an elevation of 6700 feet. The country is hilly and has no streams so large but what they dry up during the dry season, which lasts from September until July. Eighteen miles from the post is the Mimbres River. The climate and vegetation are the same as that described by Mr. Mitchell.

1. **Callipepla squamata.** Scaled Partridge. — Abundant, staying especially in the patches of cactus. Breeds, and I was told it is resident.

2. **Haliæetus leucocephalus.** Bald Eagle. — Rare.

3. **Falco sparverius deserticolus.** Desert Sparrow Hawk. — Fairly common, replacing the Sparrow Hawk, of which I saw none.

4. **Geococcyx californianus.** Roadrunner. — Abundant, feeding principally on insects. Found breeding late in May.

5. **Dryobates villosus hyloscopus.** — Fairly common wherever the trees are of a large size.

6. **Dryobates scalaris bairdi.** Texan Woodpecker. — Moderately common.

7. **Antrostomus vociferus macromystax.** Stephens's Whip-poor-will. — Uncommon. Found them breeding the middle of July, laying two eggs on the bare ground.

8. **Tyrannus vociferans**. CASSIN'S KINGBIRD. — Very abundant, taking the place of the Kingbird of the East, but not so pugnacious as the latter. Breeds, and after the nesting season was over they used to gather in some cottonwood trees near the house about dusk, and keep up a continuous shrieking, calling, and fighting until long after dark. Probably raises two broods a year.

9. **Contopus richardsonii**. WESTERN WOOD PEWEE. — Fairly common. Breeds, and while nesting does not hesitate to attack anything venturing in the neighborhood of its nest.

10. **Icterus parisorum**. SCOTT'S ORIOLE. — Rare; only one specimen taken, but I thought I saw it again.

11. **Spizella socialis**. CHIPPING SPARROW. — A few of these came in the fall with the flocks of other Sparrows that arrived then.

12. **Junco hyemalis shufeldti**. SCHUFELDT'S JUNCO. — These became common in flocks towards the end of October and were sometimes associated with the other Sparrows.

13. **Zonotrichia leucophrys intermedia**. INTERMEDIATE SPARROW. — Uncommon. These also appeared in the fall.

14. **Hirundo erythrogaster**. BARN SWALLOW. — Abundant where there were suitable places for it to breed. Found them nesting June 1.

15. **Lanius ludovicianus excubitorides**. WHITE-RUMPED SHRIKE. — Common and probably breeding.

16. **Harporhynchus curvirostris**. CURVE-BILLED THRASHER. — Abundant and breeds, being very fond of the cactus for a nesting site, and probably raising two broods a year. This bird is a sweet songster and is often kept as a cage-bird.

17. **Harporhynchus crissalis**. CRISSAL THRASHER. — Rare. I saw but few of them and principally in the fall.

18. **Parus inornatus griseus**. GRAY TITMOUSE. — Fairly common, singly and in pairs.

19. **Psaltriparus plumbeus**. LEAD-COLORED BUSH-TIT. — Common, and found generally in flocks in the groves of small pines and firs. More noticeable in the fall.

Mr. Mitchell speaks of *Cyanocitta stelleri macrolopha* as being much more common than *Aphelocoma woodhousei*. Where I was it was just the opposite, as *A. woodhousei* was very common and breeding. — SIDNEY S. WILSON, *St. Joseph, Mo.*

Notes from Rhode Island. — The following records seem to me worthy of publication: —

Melanerpes erythrocephalus. RED-HEADED WOODPECKER. — At Jamestown, Conanicut Island, on September, 1898, I took a young male, and in the Newport Historical Society's Collection there is a young bird, sex not given, that was taken in the same locality in October, 1892, by Amon Parmenter.

Lanius ludovicianus (migrans). — On August 29, 1898, Master LeRoy King took a Shrike on Indian Ave., Newport, and brought the specimen to Edward Sturtevant, Esq., through whose kindness it finally reached me for identification. I referred the bird directly to Mr. William Palmer's new subspecies *migrans* of *Lanius ludovicianus*, described in 'The Auk' (Vol. XV, No. 3, 244), and forwarded the specimen to him for his examination. The bird is an immature female and measured by Mr. Palmer's measurement (taken from skin), wing, 3.85; tail, 3.60; culmen, .53; tarsus, 1.12. Mr. Palmer referred the bird to his subspecies and drew attention to some points I had already noted, *viz.*, first plumage feathers on head, back, and wing-coverts and the growing out of a new tail-feather, either to replace moult or loss. For the present we must call the bird, I suppose, *Lanius ludovicianus excubitorides*.

Numenius longirostris. LONG-BILLED CURLEW. — At Jamestown on September 9, 1897, a single bird, sex unknown, was taken by Thomas R. Stetson on the edge of Round Swamp. The bird I obtained and is now in the collection of Mr. William Brewster, Cambridge, Mass.

Ammodramus princeps. IPSWICH SPARROW. — Among the dunes back of the first and second beach at Newport and Middletown this species winters not uncommonly. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

Notes on Long Island Birds. — The following data include observations of some birds not before referred to by the writer, while others have been included here on the ground of further acqaintanceship, or for other reasons.

Larus leucopterus (or **kumlieni**). On March 8, 1898, a Gull was shot by John Tiernan of Rockaway Beach while he was lying in a small boat about five miles off shore stooling for Old Squaw Ducks. On the following day while at the beach, I noticed this Gull hanging on the awning frame of Tiernan's hotel. The light colored (almost white) primaries caught my attention at once, and I secured the bird. It is an immature male; much smaller than *L. glaucus*, and its rather dark coloration I found puzzling. Through the kindness of Mr. Walter Deane of Cambridge, Mass., the skin was examined by Mr. William Brewster who named it *L. leucopterus*. Mr. Brewster is inclined to regard the phase of plumage represented by the present specimen as belonging to that of the immature *L. kumlieni*, the status of which, as yet, has not been determined. The Iceland Gull has been rarely taken on Long Island. Giraud makes no mention of the species, nor is it included in Mr. Lawrence's 'Catalogue of Birds.' It is stated in Chapman's 'Birds of Eastern North America' to be an autumnal visitant in winter.

Sterna caspia. The Caspian Tern appears to occur on our coast regularly each autumn, though it is never, I believe, common. On May 12, 1898, I received two adult males from Mr. Andrew Chichester of Amityville, Long Island, who had shot them on the South Bay the preceding

day, together with one other specimen, which was given by him to a local taxidermist, and which I saw later. The sex of the latter bird was undetermined. Mr. Chapman believes these to be the first spring records for this vicinity. Mr. Dutcher, writing me in regard to this species, says they constitute the first record of this species occurring here in spring. In the autumn of this year, at the same place, September 3, I met with two more specimens; one, an immature female, which was shot, and an adult bird. Mr. William Dutcher informs me that he has always seen the young accompanied in this way by an adult and never alone.

Aythya collaris. The Ring-necked Duck has been so infrequently recorded from Long Island that it is well worthy of mention. The gunner above mentioned sent me this specimen, a male, which he believed to be a "cross between a Red-head and a Broad-bill." He had "never seen one like it before," and consequently it must be rare on Long Island, as during his long experience as a gunner in the Great South Bay he has met with many rare, as well as the ordinary, species which frequent this famous resort of water-fowl. The bird came alone to the decoys.

Tringa bairdii. While on a visit to Shinnecock Bay on Oct. 31, 1894, a number of Snipes were seen and secured, notably White-rumped Sandpipers. This specimen, among others, was labeled as such, but not without some misgivings. Only recently it was more critically examined and found to be *T. bairdii*. Mr. Arthur H. Howell, who was at the same place when the bird was shot, recently recalled to my mind the fact that the bird was alone, on a sandbar, when shot. The bird was not very active, and it is possible may have been previously wounded. Mr. N. T. Lawrence has obtained three or more specimens from Long Island. The species is not included by Giraud in 'The Birds of Long Island.'

Ereunetes occidentalis. In the fall of 1897, the Western Semipalmated Sandpiper was abundant on Long Island. Besides three or more specimens from Shinnecock Bay, collected by Mr. Howell, it was met with by Mr. H. C. Burton on the South Bay in July and by the writer during the same season (once each) on both the Great South Bay and (August 28) on Jamaica Bay.

Alauda arvensis. The English Skylark is at present firmly established as a Long Island resident. Between Flatlands and Holy Cross Cemetery, and to the east of the latter, many are to be seen and heard. On March 28, 1898, while on the Neck Road, I heard for the first time the twittering, *burring*, continuously sustained song of this species and saw it rising gradually on fluttering wings up into the blue ether. At a later date one was heard singing continuously for eight minutes while in the air and for two minutes more *after alighting on the ground*. They were neither seen nor heard in September and October, though doubtless they might have been at suitable times; namely, early in the morning or in the evening. Several were heard and seen at the same time in the locality indicated above. It is likely they will later be found at other points on Long Island.

Sturnus vulgaris. About a mile in a straight line from the colony of Skylarks, I first saw the European Starling, where it was afterward seen repeatedly. Near Kensington Station someone within the present year has placed in a large tree several bird boxes, which are occupied by the Starlings.

The tower of the Boys' High School in Brooklyn noted in the article referred to as occupied by these birds, still retains its attractions for them. This was probably the original nesting colony on Long Island. Another colony now occupies the steeple of a church at Bedford Avenue and Madison Street. At several points in the environs of Brooklyn the Starlings have been seen, where they were evidently visiting for the purpose of obtaining food, while at various points in the city itself they are commonly observed.

Ammodramus sandwichensis savanna. — The Savanna Sparrow has been found on Long Island in summer, but not so far west I believe as the following record. At Garden City 17th July, 1897, an adult male in worn breeding plumage was found in a locality where many Grasshopper Sparrows were resident. Mr. Oberholser considers this an interesting discovery and at his suggestion it is made a matter of record. Mr. Wm. Dutcher has recorded this species from Long Island in summer. It is also a winter bird on Long Island. The writer met with a specimen Jan. 30, 1895, at Flatbush, L. I.

Contopus borealis. The Olive-sided Flycatchers were seen in limited numbers in the early autumn of 1896 in Brooklyn (Auk, XIV, p. 99). They have been observed since in both 1897 and 1898, single specimens having been secured on the following dates: September 25, 1897, an immature female, and August 27, 1898, an adult male. It should be considered, I think, a regular and not uncommon autumn migrant for Long Island.

Empidonax flaviventris. The Yellow-bellied Flycatcher was first described in 1843 by Wm. M. and S. F. Baird as *Tyrannula flaviventris* in Pr. Ac. Nat. Sc. Phil., I, 283. Giraud makes no mention of the species in 'The Birds of Long Island,' published in 1844, though it had been separated and described, as above, in the year preceding the issue of his work. It is a matter of interest to note that the first specimen in the series of this species in Prof. Baird's collection was taken on Long Island, being labeled Raynor Sound (South), Long Island, Aug. 4, 1831 (Cat. No. 1951. See U. S. P. R. R. Exp. and Surveys, IX, 1860, p. 199. It seems to occur rather rarely on Long Island in spring, while in the autumn it is certainly not rare. Mr. Dutcher has kindly furnished me with the following data of its occurrence: Aug. 19, 1893, Parkville (Coll. Wm. Dutcher); Sept. 18, 1890, Statue of Liberty, N. Y. Harbor; May 19, 1892, Flatbush (per A. H. Howell); June 10, 1893, Brooklyn (per A. H. H.). The following dates of their occurrence are added from my own notes: May 25, 1897, Parkville; Aug. 27, 1898, do.; Sept. 2, Sheepshead Bay; Sept. 11, 1895, Parkville. The above dates probably cover nearly

the limits of its occurrence on Long Island; namely, May 19 to June 10 and Aug. 4 to Sept. 18. — Wm. C. Braislin, M. D., *Brooklyn, N. Y.*

Some Birds of Unusual Occurrence in Orleans County, N. Y. — During the past week the writer has accomplished a casual reading of a complete file of 'The Auk', from Vol. I, No. 1 to date, and finds that during the entire fifteen years of its publication it has contained only two items which pertain to the ornithology of this county, and those were of but a paragraph each. Our county has not, however, been so free from rare avian visitors as this sparsity of record would seem to indicate. On the contrary, there have been many occurrences well worthy of mention, although it does seem that no one has taken the pains to have them properly recorded. Permit me now to make mention of some of the most interesting of these, as follows: —

Colymbus holboelli. Holboell's Grebe. — A somewhat ancient record, dating back to May 1, 1873, on which day, Mr. David Bruce of Brockport secured a specimen near Murray. This bird was somewhat above the ordinary in size, measuring twenty-one inches in length.

Uria lomvia. Brünnich's Murre. — Mr. F. A. Macomber of Murray has a mounted specimen in winter plumage which was brought to him in the first half of March, 1897, having been taken alive by hand, in a famished condition, on the ice of Sandy Creek. My collection contains the mounted head of another individual which was picked up dead from the Lake Ontario shore in the town of Kendall, by Mr. Harry Burnett.

Rissa tridactyla. Kittiwake. — A mounted specimen in the collection of Mr. O. B. Mitchell of Holley, taken by him on a pond in the town of Clarendon after a heavy storm.

Sterna caspia. Caspian Tern. — A finely mounted female of this species is in the collection of Mr. David Bruce of Brockport, taken by him in September, 1890, on Lake Ontario, in the town of Kendall.

Phaëthon flavirostris. Yellow-billed Tropic Bird. — The extraordinary occurrence of this very southern bird in our county is recorded by Rev. J. H. Langille in his 'Our Birds in their Haunts,' page 615.

Branta canadensis hutchinsii. Hutchins's Goose. — A specimen taken at Gaines, about 1888, is now in the possession of Mr. Newell Beekwith of that place.

Plegadis autumnalis. Glossy Ibis. — An individual of this species was shot in Tonawanda Swamp in May, 1889 and brought to Mr. George H. Hedley of Medina to be mounted.

Ardea egretta. American Egret. — Three of these birds wandered into our county in July, 1883, and two of them were shot near Kent on the 27th of that month. One of these is now in the possession of Mr. Edgar Ford of Carlyon, who shot it.

Nycticorax nycticorax nævius. — Black-crowned Night Heron. — The late Alfred Myhill of Medina once took a specimen from a marsh

along the lake shore. The mount is now, with the rest of his collection, in the possession of his father, Mr. William Myhill of the Ridge Road.

Rallus elegans. KING RAIL. — About August, 1880, Mr. Milo C. Webster of Knowlesville (now of Buffalo) while out on a hunt in company with Rev. J. H. Langille, shot a King Rail in a marsh on the lake shore in the town of Carlton. Mr. Langille makes mention of this specimen in his 'Our Birds in their Haunts,' page 400.

Porzana noveboracensis. YELLOW RAIL. — Two individuals, taken by Mr. F. A. Macomber of Murray near that place, April 21, 1894, and another the following year at about the same time. Two of these specimens are now in his collection, — the third is in the collection of Mr. David Bruce of Brockport.

Tringa canutus. KNOT. — A young male of the year was taken on the Lake Ontario shore in the town of Carlton, Sept. 9, 1897, by Mr. Percy Smithe of Medina.

Tringa fuscicollis. WHITE-RUMPED SANDPIPER. — Mr. Percy Smithe of Medina secured a male of this species from the lake shore in Carlton, Oct. 16, 1897.

Tringa bairdii. BAIRD'S SANDPIPER. — A mounted specimen in my collection marks the first occurrence (so far as I have been able to learn) of this Sandpiper in the western half of New York State. It was taken, together with one other of its kind, Sept. 3, 1895, at "the head of still water," on Oak Orchard Creek (just north of Waterport) by Mr. John Ritenburgh of Gaines. These two specimens slumbered unrecognized, in the possession of Mr. Ritenburgh until Sept., 1897, when they were turned over to Mr. Ernest H. Short. If Mr. Short recognized these birds as *Tringa bairdii*, he made no stir about the matter nor any record of the rare occurrence, disposing of one of them, meanwhile. The other I procured of him, December 2, 1898, and determined its identity forthwith. While these two specimens were remaining unrecognized, others were being taken in our county, were more promptly analyzed and recognized, and a published record made, thereby gaining a priority over these taken three years before.

Mr. J. L. Davison of Lockport, N. Y., while sojourning at Lakeside Park, this county, during the early fall of 1898, secured along the lake shore near that point, five specimens of *Tringa bairdii*, as follows: — Aug. 20, two; Sept. 8, two; Sept. 16, one. I am indebted to Mr. Davison and to Miss Mathilde Schlegel (who mounted them) of East Aurora, N. Y., for complete and detailed data regarding the taking of these additional five Baird's Sandpipers in my own county of Orleans. (See Forest and Stream, Jan. 7, 1899).

Tryngites subruficollis. BUFF-BREASTED SANDPIPER. — A finely mounted example is in the collection of Mr. David Bruce of Brockport which was taken in the town of Kendall, "fifteen or sixteen years ago."

Also one was brought to Mr. Ernest H. Short of Gaines for mounting, in the fall of 1897.

Numenius hudsonicus. HUDSONIAN CURLEW. — One taken from a flock of Killdeers in September, 1897, near Murray, by Mr. F. A. Macomber of that place. Now in his collection.

Cathartes aura. TURKEY VULTURE. — A young male taken in town of Kendall, May 23, 1884. (See Auk, Vol. I, No. 3, July, 1884.) Mr. David Bruce of Brockport now has this specimen. Also an adult male taken in the town of Clarendon, July 18, 1891, and now in the New York State Museum at Albany. (See Auk, Vol. IX, No. 2, April, 1892.)

Catharistes urubu. BLACK VULTURE. — An individual of this species was caught in a trap by a farmer residing near Shelby Center, on the 28th of May, 1892, and came under my observation while yet alive.

Surnia ulula caparoch. AMERICAN HAWK OWL. — Mr. David Bruce has a specimen in his collection which was taken near Holley a few years ago.

Empidonax flaviventris. YELLOW-BELLIED FLYCATCHER. — A mounted female in my collection taken May 26, 1890, at Hulberton by Mr. Jesse Craven. Other county taken specimens (one or two) have come under my observation also.

Icterus spurius. — ORCHARD ORIOLE. — "Several from gulch near Holley, in thespring of 1876" (David Bruce). "A pair (♂ and ♀) brought me in June, 1896 (first week) shot near Gaines, possibly would have bred" (Ernest H. Short). I have in my collection a typical nest of this species, taken about August 1, 1898, at Lakeside Park, by Mr. J. L. Davison of Lockport. A tiny bit of egg-shell found hidden beneath the lining of the nest, gave evidence of its occupancy during the past season.

Coccothraustes vespertinus. EVENING GROSBEAK. — During the remarkable flight of these birds to the eastward in the winter of 1889–90, several were taken at different points about the county.

Loxia leucoptera. WHITE-WINGED CROSSBILL. — A mounted female of this species is in my collection taken at Holley in February, 1888, by Mr. Jesse Craven. Other occurrences of this bird in our county are also reported to me.

Dendroica palmarum. PALM WARBLER. — A male example in my collection taken near Holley, May 12, 1888, and other occurrences of this Warbler in the county have been reported. Dr. Jonathan Dwight, Jr., of New York, to whom I recently sent the specimen, seemed surprised that my bird was *palmarum*, as he felt that *D. p. hypochrysea* was the form which should be found here. However, all examples taken in this and adjoining counties of western New York of which I know, seem referable to *palmarum*.

Icteria virens. YELLOW-BREASTED CHAT. — On Memorial Day, 1895, near Shelby Center, I saw an individual of this species, using the opera glasses upon it at short range. I was led to the bird by first hearing it pour forth a most indiscriminate medley of all kinds of notes. Also Mr. Fred C. Lusk of Holley took a male in full plumage near that place May

8, 1880, and another occurrence which I have not yet had opportunity to investigate is recently reported to me from the eastern part of the county.

Sylvania pusilla. WILSON'S WARBLER. — Two male specimens shot near Gaines and brought in to Mr. Ernest H. Short of that place, May 28, 1897. Now in his collection.

Parus bicolor. TUFTED TITMOUSE. — I prize nothing which I have in my collection more highly than I do a fine male of this species, which was taken just south of Holley, March 17, 1889, by Mr. Fred C. Lusk. This bright bird would be a charming addition to our regular avi-fauna, but I know of no other records of its occurrence in this or adjoining counties.

In the foregoing notes, I have only made mention of some of the rarer birds which have been taken in Orleans County, but there yet remain unreported several unusual occurrences for this section which should become matters of record, and which, at some later day perhaps, I may report to your valuable journal. Some of these occurrences are fully as rare as any mentioned above, but as yet lack the authentic and complete corroboration which I hope to attach to them after further investigation. — NEIL F. POSSON, *Medina, N. Y.*

Late Migrants and Stragglers in Eastern Massachusetts. — Many birds stayed unusually late in Eastern Massachusetts this autumn, owing very likely to the mild weather which we enjoyed during October and most of November. Bluebirds, Chipping Sparrows and Field Sparrows, which generally disappear in the first week of November, were seen as late as the 13th of that month. The Blackbirds also prolonged their stay longer than usual; I saw a flock of at least thirty Cowbirds in Belmont associated, up to Nov. 13, with over two hundred Red-wings and some Rusty Grackles. The last Cowbird was seen on Nov. 21; on Nov. 13, I saw three Bronzed Grackles. On Nov. 1 Mr. Faxon and I saw a Lincoln's Finch, and on Nov. 5 I saw an immature White-crowned Sparrow. The height of the migration of both of these birds is about Oct. 1, and the latest dates hitherto noted for either are from a week to ten days earlier than those above recorded. On Nov. 3, I saw a Black-throated Green Warbler in Cambridge.

There have been also three interesting stragglers in this vicinity during November. On the 2d of November I found a female Wilson's Blackcap in Belmont; the bird stayed in the same locality till Nov. 20, and uttered when startled a curious wren-like *kek, kek*, which I have never before heard. Believing that the bird would eventually starve or freeze to death, I asked a friend on the 20th to shoot it.

On Nov. 5th I saw a European Goldfinch (*Carduelis*) in Arlington. The bird behaved like any wild bird. On Oct. 26, and again on Nov. 17, I saw in Belmont a Mockingbird. I placed food near the spot where I saw the bird, but have not since seen it. — RALPH HOFFMANN, *Belmont, Mass.*

Destruction of Birds by the Great Cold Wave of February 13 and 14, 1899. — The cold wave which struck the coast of South Carolina was the severest recorded for 200 years. On Monday, February 13, the thermometer registered 14° above zero, with the ground covered with snow from four to five inches deep on a level, while drifts were two feet deep. This is a remarkable occurrence for the coast region and to be seen scarcely in a lifetime. On Tuesday, at 6.55 A. M., the thermometer registered 6° above zero. This excessively cold weather came upon us very suddenly. It was sleeting all day Sunday, February 12, but towards midnight grew suddenly colder, and when morning dawned the whole country was covered with snow. The destruction of bird life caused by this cold wave can scarcely be conceived. To say that Fox Sparrows (*Passerella iliaca*), and Snow birds (*Junco hyemalis*) were frozen to death by the *millions* is not an exaggerated statement, but a conservative one. There was a tremendous migration of Fox Sparrows on Monday, the 13th, following the coast line of the mainland. They apparently came from the northeast, migrating in a southwesterly direction. Thousands tarried in my yard all day long and swarmed in the piazza, fowl-yard and every place that would afford protection. They would scratch away the snow in order to find a bare place, singing — that is the stronger birds — the whole time, while their companions were freezing by the hundreds. When they were benumbed by the intense cold Boat-tailed Grackles (*Quiscalus major*), and Red-winged Blackbirds (*Agelaius phœniceus*) would peck them at the base of the skull, killing them and *eating* them. The stronger Fox Sparrows would also *eat* their dead companions. It was a most pathetic sight. I caught quantities of Fox Sparrows, Grass Finches, Snowbirds, and Chipping Sparrows and put them into a large cage which I brought into the house and placed before a large fire with the hope of saving them from destruction, but despite this they *all died*. Very few of these birds were emaciated, and the great majority were fat.

The Woodcock (*Philohela minor*) arrived in countless thousands. Prior to their arrival I had seen but two birds the entire winter. They were everywhere and were completely bewildered. Tens of thousands were killed by would-be sportsmen, and thousands were frozen to death. The great majority were so emaciated that they were practically feathers and of course were unable to withstand the cold. One man killed 200 *pairs* in a few hours. I shot a dozen birds. Late Tuesday afternoon I easily caught several birds on the snow and put them into a thawed spot on the edge of a swift-running stream in order that they would not perish, but upon going to the place the next morning I found one frozen. These were fearfully emaciated and could scarcely fly. Two birds were killed in Charleston in Broad street. It will be many years before this fine bird can establish itself under the most favorable conditions. The following is a list of birds that I saw which were frozen to death: Fox Sparrow, *Passerella iliaca;* Snowbird, *Junco hyemalis*; Woodcock, *Philohela minor;*

Grass Finch, *Poœcetes gramineus;* Savanna Sparrow, *Ammodramus sandwichensis savanna;* Chipping Sparrow, *Spizella socialis;* Song Sparrow, *Melospiza fasciata;* Swamp Sparrow, *Melospiza georgiana;* Blue-headed Vireo, *Vireo solitarius;* Hermit Thrush, *Turdus aonalaschkæ pallasii;* Meadowlark, *Sturnella magna;* Mourning Dove, *Zenaidura macroura;* Killdeer, *Ægialitis vocifera;* Bluebird, *Sialia sialis;* Catbirds, *Galeoscoptes carolinensis;* Pine Warbler, *Dendroica vigorsii.*

Bluebirds and Pine Warblers were decimated. Mockingbirds, Cardinals, Florida Towhees, Carolina Wrens, and all Woodpeckers escaped. — ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

RECENT LITERATURE.

Volume XXVI of the British Museum Catalogue of Birds.[1] — Volume XXVI of the British Museum Catalogue of Birds is the last to appear of the twenty-seven volumes constituting this magnificent series, Volume XXVII having been previously issued. The first volume of this great work appeared in June, 1874, the others following at irregular intervals of, in the average, rather less than a year, the last volume having been brought out towards the close of 1898. As a general work on the birds of the world, no preceding treatise from the time of Linnæus to the present day, is at all to be compared with it in point of completeness or in method of treatment. To say that it marks an era in the history of ornithology is only faintly to imply its vast importance.

We learn from the Preface of this last volume, by Sir W. H. Flower, Director of the Natural History Department of the British Museum, that this great undertaking was originally projected by Dr. Albert Günther, his predecessor in the office of Director, "more than twenty-five years

[1] Catalogue | of the | Plataleæ, Herodiones, Steganopodes, | Pygopodes, Alcæ, and Impennes | in the | Collection | of the | British Museum. | — (Plataleæ) Ibises and Spoon-bills) | and | Herodiones (Herons and Storks), | by | R. Bowdler Sharpe. | Steganopodes (Cormorants, Gannets, Frigate-Birds, Tropic- | Birds, and Pelicans), Pygopodes (Divers and Grebes), | Alcæ (Auks), and Impennes (Penguins), | by | W. R. Ogilvie-Grant. | London: | Printed by order of the Trustees. | Sold by | Longmans & Co., 39 Paternoster Row, E. C.; | B. Quaritch, 15 Piccadilly, W.; Dulau & Co., 37 Soho Square, W.; | Kegan Paul, French, Trübner, & Co., Charing Cross Road, W. C.; | and at the | British Museum (Natural History), Cromwell Road, S. W. | 1898. = Catalogue of the Birds in the British Museum, Vol. XXVI. 8vo, pp. xvii + 687, pll. i–ic, ii, iia, iii, iv, v–vb, vi–viii.

ago.... The publication of the work has therefore been nearly coincident with Dr. Günther's administration of the Zoölogical Department of the Museum. It is to him that the general arrangement and supervision of the work is due, although each contributor has been allowed a considerable latitude in following his own views as to the details of classification and nomenclature.

"It was at first contemplated that Dr. R. Bowdler Sharpe would undertake the whole work, and the first four volumes were completed by him between the years 1872 to 1879. It, however, soon became apparent that continually increasing curatorial duties.... required very much of his attention, and notwithstanding the energy with which he threw himself into the work, it was manifestly impossible for him single-handed to complete the Catalogue within any reasonable time." Consequently the aid of other specialists was invoked to take up certain groups to which they had given special attention, while Dr. Sharpe did not relinquish his labors. "Not only did he materially assist in many of the volumes produced under the names of other authors, but for seven more volumes (making eleven altogether) he is entirely, and for two others he is partly, responsible. Some indication of the amount of his share in the whole work may be gained from the statement that out of 11,548 species described in the Catalogue, 5181 are contained in Dr. Sharpe's portion, and 6367 in those written by the ten other authors."

The other authors are the late Mr. Henry Seebohm, who prepared Vol. V, the family Turdidæ (1881); Dr. Hans Gadow, Vol. VIII, the families Paridæ and Laniidæ, and the Certhiomorphæ (1883), and Vol. IX, the Cinnyrimorphæ (1884); Dr. P. L. Sclater, Vol. XI, the families Cœrebidæ, Tanagridæ, and Icteridæ (1886), Vol. XIV, the Oligomyodæ (1888), Vol. XV, the Tracheophonæ (1890), and part of Vol. XIX (Rhamphastidæ, Galbulidæ, and Bucconidæ); the late Mr. Osbert Salvin, part of Vol. XVI (Upupæ and Trochili) and part of Vol. XXV (Tubinares); Mr. Ernst Hartert, part of Vol. XVI (families Cypselidæ, Caprimulgidæ, Podargidæ, and Steatornithidæ); the late Edward Hargitt, Vol. XVIII, the Picidæ (1890); Capt. G. E. Shelley, part of Vol. XIX (Indicatoridæ, Capitonidæ, Cuculidæ, and Musophagidæ); Count T. Salvadori, Vol. XX, the Psittaci (1891), Vol. XXI, the Columbæ (1893), and Vol. XXVII, the Chenomorphæ, Crypturi, and Ratitæ; W. R. Ogilvie Grant, Vol. XXII the Gallinæ and Allies, and part of Vol. XXVI, the Steganopodes, Pygopodes, Alcæ, and Impennes; Mr. Howard Saunders, part of Vol. XXV, the Gaviæ.

The 'Catalogue' is based upon the immense collection of birds in the British Museum, which has increased from about 35,000 in 1872 to about 400,000 at the present time, supplemented by "all other available material contained in public or private collections, or described in zoölogical literature. It therefore professes to be a complete list of every bird known at the time of the publication of the volume treating of the group to which it belongs. Under the heading of each species is (1) a copious synonymy: references being given to every mention of it which occurs

in standard books or journals. [This is more nearly true of the later volumes than of many of the earlier volumes.] This has been a work of prodigious labour, but it is hoped that, being fairly exhaustive, it has been done once for all, as far as existing literature is concerned. (2) A full description of the external characters of both sexes, and, as far as possible, all stages of plumage. (3) A general account of the habitat of the species. (4) A list of every individual specimen in the Museum Collection, with a statement as to the source from whence it was obtained and its original locality." This high aim has been as nearly reached, at least in many of the volumes, as, in the nature of such things, could be reasonably expected.

The colored illustrations in these twenty-seven volumes represent (in 387 plates) 540 species not before figured, or else only inadequately, the drawings, by Keulemans, being made in almost every case "from the types of the species."

The Preface to Vol. XXVI further states that owing to the vast increase in the collection during the last twenty-five years the earlier volumes "represent a very inadequate idea, both of the present condition of the subject and the contents of the Museum Collection." It is therefore proposed to publish a Supplement, probably in two volumes, "which will contain references to every species described subsequently to the publication of the volume which treats of the group to which it belongs, and also such emendations as the progress of Zoölogy seems to require. When this is published, it will afford a complete list up to date of all known birds, either described in the Catalogue or elsewhere."

We have thus given a sketch of the history, scope, and aims of this great series of volumes,[1] in nearly the words of the Director of the Zoölogical Department of the British Museum. As shown, the plan of the work, and the general scheme of arrangement and classification, were decided upon more than a quarter of a century ago, as doubtless also the leading principles of nomenclature. Hence the twelfth edition of

[1] For notices in this journal of the volumes of the British Museum Catalogue of Birds see, for Vols. I, II, and III, Bull. Nutt. Orn. Club, III, 1878, p. 77–79; Vols. IV, V, and VI, *ibid.*, VIII, 1883, pp. 99–105; Vols. VII and VIII, Auk I, 1884, pp. 277–283; Vol. IX (not reviewed); Vol. X, *ibid.*, II, 1885, pp. 365–368; Vol. XI, *ibid.*, IV, 1887, pp. 149, 150; Vol. XII, *ibid.*, V, 1888, pp. 410–413; Vol. XIII, *ibid.*, VI, 1889, pp. 266–268; Vol. XIV, *ibid.*, VIII, 1891, pp. 90–92; Vol. XV, *ibid.*, VII, 1890, pp. 379, 380; Vols. XVI and XVII, *ibid.*, X, 1893, pp. 66–69; Vol. XVIII, *ibid.*, VIII, 1891, pp. 92–95; Vol. XIX, *ibid.*, IX, 1892, p. 184; Vol. XX, *ibid.*, IX, 1892, pp. 277–279; Vol. XXI, *ibid.*, XI, 1894, pp. 60–62; Vol. XXII, *ibid.*, XI, 1894, pp. 171, 172; Vol. XXIII, *ibid.*, XI, 1894, p. 242; Vol. XXIV, *ibid.*, XIV, 1897, pp. 102–104; Vol. XXV, *ibid.*, XIII, 1896, pp. 160–162; Vol. XXVI, *ibid.*, XVI, 1899, pp. 198–203; Vol. XXVII, *ibid.*, XIII, 1896, pp. 162–164.

Linnæus's 'Systema Naturæ' has been taken as the starting point for binomial nomenclature, and with slight exceptions, strictly adhered to throughout the whole series of volumes, notwithstanding the fact that in recent years the tenth edition of the 'Systema' has become the general starting point. It therefore unhappily follows that in many cases the names, both generic and specific, adopted in the 'Catalogue', are not in harmony with those that must stand, according to the present consensus of opinion on this important point.

Again, the use of trinomials for the designation of subspecies had not become greatly in vogue, at the time the 'Catalogue' was begun, and although several of the authors engaged on this work had adopted them at the time they prepared their respective portions, the orignal plan of employing binomials for all forms recognized was adhered to to the end. In respect to the '*Scomber scomber* principle', the rule has varied, the different authors having been apparently left to their own inclinations in this matter, with the result that some have retained specific names for the species to which they were originally given when later used as generic names, while some have not, thus giving rise to instability in a large number of names, whatever the ruling may be respecting the '*Scomber scomber* principle.'

A uniform method has been employed in designating type species, namely, by giving the name as it stands under the genus to which it is referred by the author of the 'Catalogue' instead of the full name, generic and specific, given it by its original describer. This is not a serious matter, but one frequently giving rise to some inconvenience if one desires to go over the ground for himself.

Marked improvement in respect to the fullness and character of the bibliographical citations has marked the progress of the work, the later volumes well meeting the most rigid requirements, while the earlier volumes were deficient and variable in point of completeness, and defective as regards the scope of the reference, even generally omitting, in the case of special works, the highly convenient and often important item of date. In other words, the authors have kept well in touch with the improved methods that have characterized in this respect, ornithological literature in general. The last seven or eight volumes are far in advance of most of their predecessors, while some of the later ones leave little to be desired in the way of further improvement.

Passing now to Volume XXVI, it is enough to say, by way of general remark, that in method of treatment and completeness it is equal to the best of the series. It embraces the Plataleæ (Ibises and Spoonbills) and Herodiones (Herons and Storks), by Dr. Sharpe, and the Steganopodes (Cormorants, Gannets, Frigate Birds, Tropic Birds and Pelicans), the Pygopodes (Divers and Grebes), the Alcæ (Auks), and the Impennes (Penguins), by Mr. Ogilvie Grant. The Plataleæ number 33 species, with 21 genera, and the Herodiones, 120 species with 48 genera; the Steganopodes number 66 species, with 6 genera; the Pygopodes 52 species,

with 17 genera; the Impennes 17 species with 6 genera. All but ten of the species are represented in the British Museum collection. In the Plataleæ and Herodiones Mr. Sharpe retains the redundancy of genera which has characterized his recent volumes of the 'Catalogue' and his preliminary papers on these two groups, the average being 1½ species to the genus in the former and 2½ species to the genus in the latter. On the other hand Mr. Grant is very conservative, the average for the Steganopodes being 11 species to a genus, with 37 in *Phalacrocorax*, under which genus no subgenera are recognized.

As regards North American species, there are many departures from the A. O. U. Cheek-List through taking Linnæus's names at 1766 instead of 1758, and ignoring Brisson's genera, and others for other reasons. *Eudocimus*, though preoccupied by *Eudocima*, in Lepidoptera, is used in preference to *Guara*, the first strictly tenable name for the genus. All of the A. O. U. Cheek-List subgenera of *Ardea* are given the rank of genera, and in addition, a genus *Leucophoyx* (Sharpe, 1894) is employed for *Ardea candidissima*. Without the author having seen specimens of the South American *Ardea tricolor* it is recognized as specifically distinct from the North American *A. tricolor ruficollis*. On the other hand, *Nycticorax nycticorax nævius* is referred to *N. nycticorax*, and no subspecies are admitted in the *Butorides virescens* group.

Phalacrocorax urile (Gm.) becomes *P. bicristatus* Pallas, on the ground apparently that *urile* was originally composite. No subspecies are recognized under *P. pelagicus*, and only one, *cincinatus*, under *P. dilophus*, for the white-crested Pacific coast form, the two eastern forms being referred to *dilophus*, which name, however, gives place to *auritus* Lesson, 1831. While the untenability of *dilophus* (Vieillot *nec* Swainson) is evident, it is not quite so manifest that *auritus*, founded on Vieillot's very unsatisfactory figure of a supposed New Zealand specimen, is the correct substitute; under these circumstances it seems far better to accept *Phalacrocorax floridanus* Aud. (1835) as the proper name for the group. *P. mexicanus* is made a subspecies of the South American *P. vigua* (= *brasilianus* auct.). The propriety of this change was previously suggested by Mr. Ridgway (Proc. U. S. Nat. Mus., XII, 1889, p. 138).

From what we have already said about the treatment of Brissonian names, we find as a matter of course *Plotus* used in place of *Anhinga*, and Linnæus at 1766 gives *Colymbus* for the Loons, *Gavia* being disposed of as having "no type"! *Gavia arctica* is not regarded as North American, the North American birds recognized under this name by American writers being referred to *Gavia pacifica*, which latter is made a subspecies of *arctica*.

Cepphus is treated as a synonym of *Uria*, the Guillemots not being awarded even subgeneric rank. Yet a new genus, *Micruria*, is proposed for two of the species of *Brachyrhamphus* — *B. hypoleucus* and *B. craveri*, the former being the type of the new genus. The name *kittlitzii* Brandt, 1837, is superceded by *brevirostris* Vigors, 1828 — perhaps

justly, though it is odd that the type should have been taken at San Blas, Mexico, "August 9," this being on Aleutian Island and Kamchatkan species. *Phaleris* Temminck, 1820, is restored for the Paroquet Auklet in place of *Cyclorrhynchus* Kaup, 1829, although Stejneger (Orn. Expl. in Commander Isls., 1855, p. 38) has pretty clearly shown that *Alca pygmæa* Gm. must be regarded as the type of *Phaleris*. But these are mainly points where differences of opinion are liable to occur — we fear for a long time to come. — J. A. A.

Evans's 'Birds'.[1] — In a well illustrated volume of some 600 pages Mr. Evans has attempted to give "a short description of the majority of the forms in many of the Families, and of the most typical or important of the innumerable species included in the large Passerine Order." This is preceded by an introductory chapter of some 20 pages on the structural peculiarities of birds, their classification, geographical distribution, migration, etc. Mr. Evans follows Dr. Gadow's scheme of classification, "with some slight modifications." He begins with the Archæornithes and ends with the Passere, the final family of the series being the Fringillidæ. The work being intended as a popular treatise on the Class Aves, the more strictly technical phases of the subject have been avoided, as also the discussion of disputed questions. The work is prepared in a conservative spirit, without attempt at fine writing, and without stating as fact the many theories and conjectures that have received almost unqualified endorsement in some of the recent 'popular' books on birds, bird migration, and kindred subjects. A general account is given of each family, with an enumeration of many of its principal forms, and brief reference to their distribution and characteristic traits. The text is fully illustrated with, for the most part, excellent wood cuts. A large part are admirable figures by Mr. G. E. Lodge, prepared especially for the present work, while others are by Smit, or from other sources, and are thus not unfamiliar through previous use in other connections. The volume as a whole is entitled to high commendation, and will prove of great convenience as a general account of the principal forms of bird life, both recent and extinct. — J. A. A.

Von Ihering's Birds of San Paulo, Brazil.[2] — This enumeration of the birds of the State of Sao Paulo is based on the collections of the Museu

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[1] Birds | By A. H. Evans, M. A., Clare College, Cambridge | London | Macmillan and Co., Limited | New York: The Macmillan Company | 1899 | All rights reserved | — 8vo, pp. xvi + 635, 2 maps, and 144 text figures. = The Cambridge Natural History, Vol. IX. — Price $3.50.

[2] As Aves do Estado de S. Paulo. Por. H. von Ihering. Revista do Museu Paulista, Anno III, 1899, pp. 113-476.

Paulista, and on the literature of the subject. The nomenclature is essentially that of the British Museum 'Catalogue of Birds'. The synonymy of the species is given, with a brief mention of their distinctive characteristics and distribution, and the character of their occurrence in Sao Paulo. The number of species recorded as occurring in the State is 590, of which just one half are Passeres. — J. A. A.

Dearborn's Birds of Belknap and Merrimac Counties, New Hampshire.[1] — This neatly published list of 175 species is based on the personal experience of the writer during the past ten years, supplemented by other information from reliable observers, duly accredited. Although the list is incomplete, it is evidently trustworthy so far as it goes, and is judiciously annotated. The Loon (*Gavia imber*), Mr. Dearborn states, "has plainly decreased within the last two decades. Twenty years ago they bred every summer at one or more of the ponds which are the headwaters of the Suncook River." They have, however, been so far killed or frightened away by "wanton hunters" that none have nested there of late, though they still breed at Lake Winnepisaukee. The Blue Bird was very scarce in 1895, following their destruction at the south by the severe weather of the previous winter. They were more common in 1896, and in 1897 had nearly reached their normal numbers. "This sudden increase," says Mr. Dearborn, "is rather puzzling, when one considers that ordinarily there is no perceptible increase from year to year." — J. A. A.

Nash's 'The Birds of Ontario in Relation to Agriculture'.[2] — The principal groups are briefly reviewed in reference to their influence upon agriculture. The seven pages devoted to the Birds of Prey are based mainly on Dr. Fisher's well known investigations, conducted under the direction of Dr. Merriam for the U. S. Department of Agriculture. The Crows, Jays and Blackbirds are considered at some length, with a verdict that they have little to recommend them from the economic standpoint, their good deeds being in general quite balanced by their evil ones, while the Blue Jay is rather strongly condemned, mainly on account of its fondness for the eggs and young of birds much more useful than itself. The Cow Bird is regarded as a pest, on account of the "terrible destruction" of the small, insectivorous birds it chooses for its foster parents, each Cow

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[1] A | Preliminary List | of the | Birds | of | Belknap and Merrimack Counties | New Hampshire | with Notes | By | Ned Dearborn. | Presented to the Faculty of the New Hampshire College | of Agriculture and the Mechanic Arts as a Thesis | for the Degree of Master of Science, | June, 1898 | — | Durham | New Hampshire College | 1898. — 8vo, pp. 34.

[2] The Birds of Ontario in Relation to Agriculture. By Charles W. Nash. Toronto. 8vo, pp. 32, with 33 half-tone plates, from drawings by the Author. Reprinted from the Report of the Farmers' Institutes of Ontario, 1897–98.

Bird being raised at the expense of a brood of some far more useful species. The European House Sparrow's numerous bad traits are recounted, and he is likewise credited with many good deeds. In the author's opinion, his good traits about balance his mischievous ones, as he is at present represented in Ontario, but he thinks the species should not be allowed to greatly increase. Of course, the Woodpecker, Cuckoos, Thrushes, Warblers, and Flycatchers, are highly commended and their protection strongly advocated. This useful pamphlet closes with a reprint of the Ontario 'Act for the Protection of Insectivorous and other Birds'; the species exempted from protection are "Hawks, Crows, Blackbirds, and English Sparrows." The 33 full-page original illustrations are not especially artistic, but will probably aid the farmer in distinguishing between his friends and foes. — J. A. A.

Stejneger on the Birds of the Kurile Islands.[1] — This appears to be the first attempt to enumerate the birds of the Kurile Islands, which are, zoölogically speaking, as yet a *terra incognita*. The only important collection of birds made there, since Steller's visit more than a century ago, was gathered by Capt. H. J. Snow, and passed into the hands of Capt. Blakiston and Mr. Pryer, who reported upon it in their paper 'The Birds of Japan', published in 1882. Dr. Stejneger's list is an attempt "to lay a foundation upon which others may build," and for this purpose he has "gathered together all of the materials and records" accessible to him. In most cases the information is meager and unsatisfactory, and should serve to call attention to this extensive chain of islands, "about 630 miles long," as an important field for zoölogical investigation. Dr. Stejneger's list numbers 146 species. — J. A. A.

Clark on the Feather Tracts of North American Grouse and Quail.[2] — At great expense of time and trouble Dr. Clark succeeded in securing either fresh or alcoholic examples of all the genera, and of nearly all the species of North American Grouse and Quail for the purpose of studying their pterylosis. In the present paper of a dozen pages and three plates we have the results of his investigations. As the field was nearly new, the paper proves a valuable contribution to pterylography and also to North American ornithology. The information is both interesting and instructive, but does not have a decisive bearing on any points of taxon-

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[1] The Birds of the Kurile Island. By Leonhard Stejneger, Curator, Division of Reptiles and Batrachians. Proc. U. S. Nat. Mus., No. 1144, Vol. XXI, pp. 269–296.

[2] The Feather-Tracts of North American Grouse and Quail. By Hurbert Lyman Clark, Ph. D., Instructor in Zoölogy, Amherst College. Proc. U. S. Nat. Mus., No. 1166, Vol. XXI, pp. 641–653, with plates xlvii–xlix.

omy. It is rather confirmatory, as would be expected, of conclusions based on other structural features. He ventures, however, to present diagrams of the "hypothetical relationships," respectively, of the genera of Quails and Grouse, based wholly on a study of their pterylography. He expresses regret "that the amount of labor involved in this investigation has not been productive of more considerable results"; yet hardly more could have been expected than the contribution of facts here presented. It is not likely that any one set of characters, however, fully known, will ever serve as a basis for a satisfactory phylogeny. — J. A. A.

Weed on the Winter Food of the Chickadee.[1] — The scientific study of the food habits of our birds, now carried on at various Agricultural Experiment Stations and elsewhere, is placing in strong light the indebtedness of man to insectivorous birds. Mr. Weed's excellent paper on the winter food of the Chickadee shows that at this season the Chickadee's food consists very largely of the eggs of insects injurious to vegetation. "This destruction," says Dr. Weed, "of the myriad eggs of plant-lice which infest fruit, shade, and forest trees is probably the most important service the Chickadee renders during the winter residence." It also destroys the eggs of the tent caterpillar and the fall canker worm, as well as those of other noxious insects. Statistics are given of the results of stomach examinations, and a detailed account of how the investigations were conducted. The conclusion reached is that the Chickadee is "one of the best of the farmer's friends, working throughout the winter to subdue insect enemies of the farm, orchard, and garden." — J. A. A.

Weed on the Feeding Habits of the Chipping Sparrow.[2] — This is a detailed account of the number of times a pair of Chipping Sparrows fed their brood of young during "one long day in June," just before the young left the nest. It was found that the parents made nearly two hundred visits to the nest, carrying food to their young, during a single day. The precise nature of the food was of course not determined, but the most abundant elements were seen to be soft-bodied caterpillars, crickets, and crane-flies, while doubtless a great variety of other insects was taken. As this bird is an abundant, and at all times a harmless species, and commonly raises two broods each season, its utility as an insect destroyer is abundantly evident. — J. A. A.

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[1] The Winter food of the Chickadee. By Clarence M. Weed. Bull 54, New Hamphire College Agriculture Experiment Station, Durham, N. H., pp. 85–98. June 1898.

[2] The Feeding Habits of the Chipping Sparrow. By Clarence M. Weed. Bull. 55, New Hampshire College Agriculture Experiment Station, Durham, N. H., pp. 101–110. July, 1898.

Whitman's 'The Birds of Old English Literature'. — This is primarily a contribution to philology rather than to ornithology, yet it must have much interest for ornithologists who care to know the early forms of English bird names. Some two hundred bird names are here traced to their old English and cognate forms, and the subject presents many points of interest for intelligent readers, whether or not of a philological turn. — J. A. A.

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[1] The Birds of Old English Literature. By Charles Huntington Whitman, Fellow in English at Yale University. 8vo, pp. 50. Reprinted from The Journal of Germanic Philology, Vol. II, No. 2, 1898.

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CORRESPONDENCE.

The Spelling of Names.

EDITORS OF 'THE AUK':—

Dear Sirs:— For some years past I have had official or friendly relations, or both, with three distinguished men who bear the same name. By one — the President of Harvard University — it is written Eliot; by another — a zoölogist, explorer and author of world-wide reputation — Elliot; by the third — an eminent authority and writer on North American birds and mammals, for whom, by the way, it stands as a given name only — Elliott. In writing to one or another of these gentlemen, as I have sometimes had occasion to do, I have often found it necessary to verify my impression as to the precise number of "l"s and "t"s to which he laid claim. This, of course, has given some trouble, but in my simple ignorance of philology it had not occurred to me that the name in question could be "properly" spelled in only one way, and I had even supposed that some family or historical interest or value might attach to and in a way justify its slightly varying forms. These illusions, however, have been utterly dispelled by Mr. Elliot's recent onslaughts on our unfortunate Canon XL. I have read his argument with a mixture of satisfaction and shame — satisfaction at the beneficent possibilities of correctness and uniformity of spelling which his article suggests, and shame that I, as a member of the Committee could have been so misguided as to vote for a principle which sanctions writing the name of one bird *Anthus pensilvanicus* and of another *Dendroica pensylvanica*, — and this despite the fact that in my early youth I actually enjoyed the privileges of that public school education to which Mr. Elliot so feelingly alludes.

Fortunately it is not too late to retrieve my error, and I gladly take this opportunity to pledge the use of what influence I may possess with the Committee towards the elimination of Canon XL in accordance with Mr. Elliot's views, provided that gentleman will agree to secure and establish a uniform and hence "correct" spelling of the name he bears. That this will be easy enough in the case of our mutual friend Dr. Elliott Coues the latter's outspoken and cordial support of Mr. Elliot in late numbers of 'The Osprey' leaves no reason to doubt, but with the President of Harvard University there may possibly be some difficulty!

Very truly yours,

WILLIAM BREWSTER.

Cambridge, Mass.

A Protest.

EDITORS OF 'THE AUK':—

Dear Sirs:—Let me add my protest against the present collection-rage, especially the egg form. The persons given over to this mischievous passion see their own side of the matter and often, no doubt, feel innocent. There is, of course, *something* to study, however little, comparatively, even in a boughten egg shell. I emphasize the *boughten* because, the wholesale robbing of rookeries being barter, specimens gotten in this way lack even the power which an egg of one's own collecting has to call back the vision of the nest and its environment.

Any breeding colony, like that of the Brown Pelicans at Pelican Island is especially tempting to these individuals, and especially at their mercy. And while truer students are delighting in their occasional visits to such a place, and living on the memory; and whereas such a colony within reach is a priceless treasure for the world of students of the Life History of Birds, any one of these less intelligent persons may at one swoop, like a monkey in a flower garden, very nearly sweep the whole colony from the face of the earth; and at the best, for so proportionately poor a reason that his act stands black against all the beautiful good he has marred.

There should be no confounding of the horde of ignorant persons in whom the *getting-passion* is their only claim to the name of naturalist, with the *student* who must have a large series; and advice to amateurs to *get all the specimens they can* will prove pernicious in ninety-nine cases out of a hundred.

I think it very necessary to publish widely in all bird-magazines such names as that of L. W. Brownell of Nyack who has given us in 'The Osprey' his own account of his looting of Pelican Island, and bringing away one hundred and twenty-five *sets* of eggs,—about a quarter of the entire number.

Yours very truly,

ABBOTT H. THAYER.

Scarborough, N. Y.
Mar. 23, 1899.

NOTES AND NEWS.

DR. OLIVER MARCY, Dean of Northwestern University Evanston, Ill., and an Associate Member of the A. O. U., died at Evanston, Ill., March 19, 1899, at the age of 79 years. He was born at Colerain, Mass., on February 13, 1820, and was graduated from Wesleyan University in 1844. He taught natural science at the Wesleyan Academy, Wilbraham, Mass., for many years, and in 1862 became professor of natural history in the Northwestern University, which position he held until his death. From 1876 until the election of Dr. Joseph Cummings as president, in 1881, he was acting president of the University, and after this date was the Dean. In 1876 the University of Chicago conferred on him the degree of LL. D. He was a fellow of the Royal Geographical Society and a member of many other scientific bodies. In 1866 he was geologist on the Government Survey for a military road from Lewistown, Idaho, to Virginia City, Montana. Dr. Marcy, though an authority in several branches of sciences, was more especially a geologist, and the author of various geological papers, though his college duties gave him little time for original research. His genial and sympathetic nature always won for him the respect and affection of his students.

PROFESSOR OTHNIEL CHARLES MARSH, of Yale University, died at New Haven, March 18, in the 68th year of his age. He was born at Lockport, New York, in 1831, and was graduated at Yale in 1860. He subsequently studied several years under leading specialists in Europe, returning to New Haven in 1866, where he has since occupied the chair of Palæontology. He has long been recognized throughout the world as one of the leading authorities in vertebrate palæontology. His explorations in various parts of the West for fossil vertebrates began in 1868, and in subsequent years he amassed the immense collections which have been so long famous. The results of his investigations have been published in a long series of papers and memoirs, numbering nearly three hundred titles, covering a period of more than twenty-five years. His unrivalled collections of fossils, as yet only partly worked up, he presented to Yale University, with a considerable endowment for carrying on and publishing the results of further investigation of this great mass of material. Professor Marsh is well known to ornithologists for his numerous publications on fossil North American birds, including his great quarto memoir 'Odontornithes: a Monograph of the Extinct Toothed Birds of North America,' published in 1880. Probably five-sixths of the known extinct North American birds have been described by Professor Marsh. His scientific work brought him many honors both at home and abroad. In 1878 he was chosen President of the American Association for the Advancement of Science, and from 1883 to 1896 he was President of the National Academy of Sciences.

THE COOPER ORNITHOLOGICAL CLUB of California has begun the publication of a 16-page bi-monthly 'Bulletin,' of which Nos. 1 and 2 of Volume I have been received. It is edited by Chester Barlow, with Henry Reed Taylor and Howard Robertson as assistant editors. It is a large octavo, illustrated, and well printed. The first number (Jan.–Feb.) contains a portrait and a biographical sketch of Dr. James G. Cooper, by Mr. W. O. Emerson, and various short papers on California birds, by well-known California ornithologists, including an account of the nesting of the Fulvous Tree Duck, by Mr. A. M. Shields. A new subspecies of the Brown Towhee (*Pipilo fuscus carolæ*) is described by Mr. Richard C. McGregor. The second number (March–April) is filled with excellent papers and shorter articles, including the description of a new subspecies of the Myrtle Warbler (*Dendroica coronata hooveri*), and of the Song Sparrow (*Melospiza fasciata ingersolli*), by Mr. McGregor. The 'Bulletin of the Cooper Ornithological Club,' thus early, takes a prominent place in the ornithological literature of North America, and is a credit to the energy and enterprise of California ornithologists.

THE MAINE ORNITHOLOGICAL SOCIETY (formerly the United Ornithologists of Maine) has also begun the publication of an official organ to be issued quarterly, under the title 'The Journal of The Maine Ornithological Society, A Quarterly Journal of Maine Ornithology,' under the editorship of Mr. C. Morrell. The first number (Jan., 1899), contains an account of the annual meeting of the Society, held at Waterville, Dec. 31, 1898, and papers by Mr. Arthur H. Norton, Prof. A. L. Lane, and Mr. Arthur Merrill. The principal paper of the second number (April, 1899) is by Capt. Herbert L. Spinney on 'The Gulls and Terns of Sagadahoc County.' Editorial and other notes complete the number. The 'Journal' will doubtless be an important addition to the periodical literature of North American ornithology.

'BIRD-LORE', announced in the January number of 'The Auk' as soon to appear, has made its bow to the public and has been received everywhere with unstinted praise. It is therefore needless to say that it has amply fulfilled the promises held forth in the prospectus, and has, on its own merits, taken its place at the front in the list of popular natural history magazines. The abundant half-tone reproductions of photographs from birds in life are among the finest thus far produced, and the beautiful cover, general makeup, and elegant typography are quite up to the standard of the illustrations. It has a field peculiarly its own, and one in which it can do great good. It is nothing to its discredit that it purposely avoids the technical side of ornithology, aiming instead to interest the public in the æsthetic and humanitarian aspects of bird study. That there is need of and a demand for such a journal has of late become more and more manifest, and 'Bird-Lore', with its avowed purpose to promote the "study and protection of birds," has come none too soon, and that it

so completely fills its rôle is a source of great satisfaction to all bird lovers. The first number has as a frontispiece a flashlight photograph of John Burroughs at 'Slab Sides,' and the first article is 'In Warbler Time,' by this favorite author: Dr. Thomas S. Roberts writes of 'The Camera as an Aid in the Study of Birds,' with four half-tones illustrating the life habits of the Chickadee; 'From a Cabin Window,' by H. W. Menke, is illustrated by three halftones of winter bird life in Wyoming; Miss Isabel Eaton has a paper on 'Bird Studies for Children.' In the department 'For Young Observers' Miss Merriam writes of 'Our Doorstep Sparrow'; 'Notes from Field and Study,' contain short illustrated articles; 'Book News and Reviews,' give notices of new bird books, and an 'Audubon Department,' under the editorial charge of Mrs. Mabel Osgood Wright, presents a list of the Audubon Societies, and reports of their work, from the Secretaries of many of them, while similar reports will follow from others. With the usual editorial notes, this forms a well arranged number of 32 large octavo pages, and gives good evidence of its *raison d'être*.

SINCE our notice of 'The Osprey' in the January Auk, four numbers have appeared, namely, the December, January, February, and March issues, thus bringing the magazine practically up to date as regards publication. Each number contains popular articles on birds by well known ornithologists, and there are various reproductions of bird pictures by Mr. Fuertes. Dr. Gill has a communication in the February number giving 'Suggestions for a New History of North American Birds,' to be published in parts as supplements to 'The Osprey.' After pointing out the deficiencies in preceding works, and the timeliness of a new work, he proceeds to give an outline of how the new 'History' should be prepared, his hints being quite to the point for what we might term an 'ideal' history. He then considers at considerable length the 'Classification to be adopted,' discussing 'avine orders' and 'oscine families.' He makes the point that there are no orders among birds comparable with those in other classes of Vertebrates. He says: "I would scarcely recognize any orders among living birds — certainly not more than two." He proposes that the orders of most ornithologists be designated as suborders, and to give to the present suborders the rank of superfamilies. The families of 'Oscine birds' he looks upon as being as unsatisfactory as the orders. He claims: "To entitle the sections of Oscines generally called families as such, is to obscure and falsify our knowledge of structure and to give a distorted idea of the group." In contrasting the homogeneousness of structure in birds with what we may call the laxness of structure in reptiles and fishes, or even in some of the orders of mammals, he does not of course set forth any new facts, but merely emphasizes what is familiar to every specialist in vertebrates. Most taxonomers give weight to the fact that the compactness and homogeneity met with in birds is necessarily a result of that specialization as egg-laying, flying vertebrates, with which the wide range of structure and adapta-

tion seen, for instance, among reptiles, would be incompatible, if not impossible. Hence it is customary, and perhaps justifiable, that a different measure is used in dividing the class of birds into minor groups. As Dr. Gill remarks: "The differences between the extremes of the living species are less than those between the groups of the reptilian orders of turtles, or lizards, or serpents, or than those between the suborders of Primales .... or those of Carnivores or Cetaceans." This being the fact, is it better to ignore one of the most important features of the class,— its homogeneity due to its peculiar specialization,—for the sake of measuring the differences among birds by the same unit we naturally employ for reptiles? There are two ways of looking at the matter; everything depends upon the point of view, here as elsewhere.

Dr. Gill also has a few judicious remarks on the subject of subspecies, apropos of the proposed new work, and outlines his plan as regards synonymy, and the general make-up of the biographies.

The March number of 'The Osprey' comes out in a new spring suit of type and cover, and has to all appearances quite recovered from the protracted fall moult of which the editor complained in his earlier numbers. The number also contains several communications of more than usual interest.

A STATE ornithological society was organized at Denver, Colorado, Jan. 6, 1899, under the name The Colorado Ornithological Association. At the first meeting, held Feb. 4, the following officers were elected for 1899: President, Dr. W. B. Bergtold; Vice-President, E. J. Oslar; Treasurer, F. H. Fowler; Recording Secretary, H. S. Reed; Corresponding Secretary, W. Mitchell; Executive Committee, Dr. Bergtold and Messrs. Dille, Cannon, Mitchell and Collett. Although the present members all reside in Denver, it is intended to make the Association a State society, to include all the ornithologists of the State of Colorado.

THE DELAWARE VALLEY ORNITHOLOGICAL CLUB held its annual meeting at the Academy of Natural Sciences, Philadelphia, Jan. 5, 1899. The following officers were elected for the ensuing year: President, Charles J. Rhoads; Vice-President, Charles J. Pennock; Secretary, William A. Shryock; Treasurer, William L. Baily.

Among the more interesting communications presented to the Club during the past year, were 'Habits of the Brown-headed Nuthatch,' C. J. Pennock; 'Snap-shots at Birds and Nests,' Wm. L. Baily; 'Birds of Point Barrow,' E. A. McIlhenny; 'Birds killed on the Tower of City Hall,' Wm. L. Baily; 'The Hind Limb of Birds,' Wm. A. Shryock; 'Summer Birds of Wyoming Co., Pa.,' Messrs. Hughes and Stone; 'Some California Bird Notes,' Henry W. Warrington.

The average attendance for the past year was twenty-one.

THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA has recently secured the collection of bird skins formed by Mr. Josiah Hoopes of

West Chester, Pa. Although for many years retired from active ornithological work, Mr. Hoopes was formerly a well known member of the Academy's Ornithological Committee — at the time when John Cassin was the leading ornithologist of the country. The present collection has been formed during recent years, and for excellence of specimens and beauty of arrangement is probably excelled by few, if any. It consists almost entirely of North American Land Birds and comprises upward of 7000 specimens.

THE RECENT organization of The American Society of Bird-Restorers is a most hopeful sign of the times for bird lovers. While the scope of the Society is national its methods are also intensely local and practical. Fletcher Osgood, the general manager and organizer, has extended its membership over much of the United States from Maine to California, and as far south as Arkansas. Accessions are coming in constantly.

The Society seeks to bring back our native song and insect-eating birds to communities all over the country, from which they have been expelled by causes known and removable. It is broadly inclusive in its aim and methods, welcoming members of kindred organizations, and helping men and women and the young to work for our birds in practical and fascinating ways. Some of its distinctive features are: The organization of adults and youth into patrols to observe and protect our birds, especially during the nesting season; concerted action, without cruelty, against the English Sparrow, and the appointment of Bird-Wardens. General educative work, tree-planting, and food-providing for the birds are specially encouraged.

The Advisory Board includes many of our leaders in science, religion, education and affairs. It is proposed to form a Branch Society in every town and city of the Union. While the society has been in existence but a few months, already fully organized branches are forming or have formed in different parts of the Nation, and the Observation and Protective Patrol is represented in many States.

An especially important movement, likely to be initiated throughout the Union, and immediately resulting from the activity of the Bird Restorers Society, is the appointment of a body of bird wardens by the Massachusetts State Board of Agriculture. These wardens are chosen from among members of the gypsy moth extermination force, dispersed over more than thirty towns and cities. Later, it is hoped, bird wardens may be appointed by the society in every town and city of the State.

Another movement, due solely, to the American Society of Bird-Restorers, is now attracting wide attention: A Committee of Bostonians, organized by Manager Osgood and those associated with him, presented recently to the Mayor of Boston, a petition not far from thirty feet long, signed by a great number of the heaviest taxpayers in Boston, together with clergymen, educators, and people of all classes praying that the English Sparrow be reduced and if possible practically suppressed in

Boston. The petition was endorsed by Dr. L. O. Howard, Wm. Brewster, Dr. Vernon, E. H. Forbush, John Burroughs, Prof. C. H. Fernald, Messrs. Palmer and Beal, and others widely known to ornithology and kindred sciences.

The mayor (the Hon. Josiah Quincy) promptly ordered the reductions to be begun under the supervisors and general directions of the Committee organized by the American Society of Bird-Restorers.

The methods to be first tried are: Egg-destruction by the destruction of nests in the breeding season, and trapping by methods carefully studied and thus far proved effective. Many other methods are thought of and may be ultimately used. If successful in Boston, Sparrow reduction is likely to spread all over the country.

Information about this work and all other work of the American Society of Bird-Restorers will be gladly furnished on applications to Fletcher Osgood, General Manager, Boston, Mass.

THE second annual meeting of the Audubon Society of the State of New York was held in the lecture hall of the American Museum of Natural History on March 23, 1899. The program included a report on the work of the year by Frank M. Chapman, chairman of the executive committee; an address by Madame Lilli Lehmann, the famous interpreter of Wagnerian roles; the presentation of letters from Dr. Henry van Dyke and Governor Roosevelt endorsing the aims of the society; and an exhibition by Prof. A. S. Bickmore of slides of birds and their nests recently furnished by him to the normal schools of the State of New York.

Mr. Chapman stated that over 40,000 leaflets treating of various phases of the necessity for bird protection had been distributed by the society, that the interest of the public in the subject was constantly increasing, and that its field for usefulness was limited only by its available funds.

Dr. van Dyke's letter expressed continued sympathy with the cause of the society, and Governor Roosevelt wrote in the same vein and with the evident sincerity of a genuine lover of birds.

Madame Lehmann, who is prominently connected with bird protection and humane societies of Germany and Austria, spoke earnestly of the need of concerted action in awaking an interest in the work of preserving birds, and urged the importance of nature studies in the schools.

Professor Bickmore, curator of the American Museum's Department of Public Instruction, exhibited a series of 100 slides representing the leading types of American birds and their nests from the Pygopodes to Macrochires. The larger part of these pictures had been made directly from nature, and they constitute by far the most interesting and valuable set of the kind ever introduced into the schools of this country.

ERRATUM. — In the January number, page 21, line 14 from top, for true frog read tree frog.

A. Hoen & Co. Lithocaustic, Baltimore.

MYRTLE WARBLER (FIRST PLUMAGE).

YELLOW-BREASTED CHAT (FIRST PLUMAGE).

3/8 NATURAL SIZE.